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Variables Related to Sexual Aggression in Male College Students.

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**VARIABLES RELATED TO SEXUAL AGGRESSION
IN MALE COLLEGE STUDENTS**

A Dissertation

**Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy**

in

The Department of Psychology

by

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Abstract

Using the Pathfinder computer algorithm comparisons were made of participants' knowledge organization of sexual, sexually aggressive, and aggressive concepts. Three hundred and fifty-two heterosexual males (81 admitting a past history and future likelihood of sexual aggressive/coercive behavior; 111 admitting a past history of engaging in sexual aggression; 88 admitting no past history of or future likelihood of engaging in sexual aggression) rated all possible pairwise combinations of 18 words relevant to sex, aggression, sexual aggression, and emotion. Analyses of the dependent variable, number of links, failed to support predicted differences as a function of level of sexual aggression in the number of links between word categories, within word categories, or on specific words. Unpredicted differences in the organization of sexual information as a function of level of sexual aggression were obtained. Measures of network similarity and link strength failed to reveal significant differences as a function of level of sexual aggression. Results generally do not support a network theory of sexual aggression predicated upon an overlap of sexual and aggressive elements. However, further results supported Malamuth et al.'s (1991) confluence model of sexual aggression in that levels of hypermasculinity and sexual promiscuity/preoccupation varied as a function of level of sexual aggression. In addition, using regression analysis, attraction to sexual aggression and hypermasculinity were significant predictors of responses to an analogue measure of sexual aggression. Results suggest the role of sexual drive, disinhibition, and distortion in sexual aggression.

Introduction

The prevalence of sexually aggressive behavior in the general population and on college campuses has been widely established. For the purposes of this investigation, sexual aggression is defined as aggression which is displayed for the purpose of obtaining sexual contact with an adult. Although aggression occurring in the context of marital relationships may be indirectly related to sexual issues, this is not the topic of concern here.

In 1980, Louisiana was 11th in rape rate with 44.5 rapes per 100,000 people (Baron, Straus, & Jaffee, 1988). Koss, Gidycz, and Wisniewski (1987) conducted the largest survey of sexually aggressive behavior among college students and found that 53.7% of women had experienced unwanted sexual victimization (with 28% meeting the legal definition of rape) and 25% of males admitted involvement in some form of sexual aggression. According to most researchers, 15-25% of college-aged males admit engaging in some form of sexual aggression (Kanin, 1971; Malamuth, Sockloskie, Koss, & Tanaka, 1991; Petty & Dawson, 1989). For example, Craig, Kalichman, and Follingstad (1989) reported that approximately 50% of their sample of college-aged males had verbally pressured a female into sex while Rapaport and Burkhart (1984) found that only 39% of their sample denied involvement in sexual coercive behavior. Ouimette (1997) reported that 8.8% of a sample of undergraduate males reported perpetration of rape or attempted rape. In Muehlenhard and

Linton's (1987) sample of male (n=294) and female (n=341) college students, 77.6% of females and 57.3% of males reported involvement in sexually aggressive situations.

Given the psychological harm experienced by victims of sexual aggression (e.g. Amick & Calhoun, 1987; Becker & Kaplan, 1991; Cloitre, Scarvalone, & Difede, 1997; Wilson, Calhoun, & Bernat, 1998), there has been considerable effort to delineate the correlates of sexual aggression. As indicated by Murphy, Coleman, and Haynes (1986) the two main forces behind sexual aggression research stemmed from initially opposing theoretical viewpoints, the psychopathology/individual difference model and the sociocultural model. Researchers adhering to the individual difference model have approached this task with the hypothesis that offenders differ significantly from the sexually nonaggressive male on some defining feature such as arousal, biochemical abnormality, or personality construct. Generally, efforts in this tradition have not proven fruitful. The sociocultural model (Brownmiller, 1975) emphasizes the role of attitudes toward women and male culture as causes of sexual aggression. The implication of this model is that all males are socialized to engage in sexual aggression towards women. Correlations between attitude measures and measures of male sexual aggression have been demonstrated (see Malamuth & Donnerstein, 1984, for a review). However, in the opinion of the present author what has resulted is a lengthy list of behaviors and beliefs associated with sexual violence with no clear information regarding directionality (belief before behavior or vice versa) or

predictive ability (how beliefs affect behavior). Some researchers have suggested this is due to application of a univariate rather than a multivariate approach to the prediction of sexual aggression (Hall, 1990; Murphy, Coleman, Haynes, 1986; Segal & Marshall, 1985). With this warning in mind, the following investigation attempted to elucidate predictors of sexual aggression from a multivariate perspective.

According to Porter, Critelli, and Tang (1992), research in the area of sexual aggression which has been termed "cognitive" most often has been related to rape supportive beliefs and attitudes towards violence and the relationship of these variables to history of sexual aggression and self-reported likelihood of engaging in sexual aggression (e.g. Burt, 1980; Greendlinger & Byrne, 1987; Koss & Dinero, 1988; Rapaport & Burkhart, 1984). A recent review by Anderson, Cooper, and Okamura (1997) places "desire to rape a woman", "coercive fantasies", "endorsement of force", and "acceptance of interpersonal violence" under the heading "cognitive predisposition toward" rape (p. 305). Although clearly involving cognitions regarding aspects of sexual violence, the studies reviewed in Anderson et al.'s report are driven by the sociocultural theory and do not assess cognitive processes at the most basic level. Little research has been devoted to exploration of the underlying cognitive aspects that might be involved in sexual aggression. This is despite early commentary by researchers such as Malamuth, Feshbach, and Jaffe (1977) who describe sexual behavior as both a biological and a "social act which has important cognitive components" (p.112) and more recent reviews

such as one by Geer and Manguno-Mire (1996) which emphasize the importance of cognition in the domain of sexuality.

Of specific interest is the information processing approach (IPA) and the notion of cognitive associative networks. Borrowing methodologies from cognitive science, the IPA is concerned with the perception, storage, manipulation, and retrieval of information. From this perspective, humans are viewed as information processors akin to a computer. The task of a human is to process incoming information that may be generated externally from the environment and/or internally. The result of information processing is behavior.

The IPA seeks to understand complex behavior as resulting from the interaction of less complex processes (Massaro & Cowan, 1993). Research from this perspective relating to the domain of sexuality has demonstrated the saliency of sexual material (Neilsen & Saranson, 1981), gender differences in memory for sexual information (Geer & McGlone, 1990) and the effect of context on memory for ambiguous material (Castille & Geer, 1993). To date, no research on sexual aggression has been undertaken within the IPA framework.

The IPA provides a perspective that could guide efforts to elucidate differences in the organization of sexual and aggressive information which might partially account for differences in the display of sexually aggressive behavior. That is, while the interrelatedness of sex and aggression on both a physiological and behavioral level has been demonstrated (Malamuth, Feshbach, & Jaffe, 1977), this interconnection has not been demonstrated at the level of semantic organization. Malamuth et al. (1977) suggested 22 years

ago that the link between sex and aggression was based upon "common inhibitory properties" established through socialization (p. 130) this link has not been delineated beyond the level of attitudes, physiology, and displayed behavior. For this reason, it is the contention of the present author that application of the IPA to the domain of sexual aggression could provide valuable evidence of a further link between sex and aggression.

Several theories falling under the rubric of the IPA have been generated. Beck, Rush, Shaw, and Emery (1979) proposed that an underlying cognitive structure, a schema, contains stored information which when activated influences processing of incoming information. Specifically, the system is biased toward processing information in a manner consistent with existing schemas. More recently, Andersen and Cyranowski (1994) proposed that individuals possess a sexual self-schema which is an individualized cognitive representation of sexuality. A sexual self-schema is postulated to arise from past experience and to guide sexual behavior. Self-schemas vary by gender and are dynamic, complex, and influence the processing of sexually relevant information (Andersen, Cyranowski, & Espindle, 1999; Andersen, Woods, & Copeland, 1997).

Scripting theory provides another viewpoint. Following scripting theory, it is the information about a particular context that guides behavior. Specifically, Simon and Gagnon (1986) contend that scripts are metaphors for "conceptualizing the production of behavior within social life" (p. 98). They offer that scripting occurs at the cultural, interpersonal, and intrapsychic levels.

Furthermore, they contend that individuals may attach sexual meaning to facets of the environment that others do not view as sexual in nature. As related to information processing theory, a script could be regarded as the organization of all information relevant to a particular context. As pertains to the present study, access to the organization of sexual and aggressive information in the form of a semantic network would at least be an indication of the potential information included in a sexual script or schema involving aggression.

A cognitive associative network is a description of the organization of information in memory in which knowledge (emotions, attitudes, ideas, etc.) is represented as nodes which are connected by links. The links between nodes represent the degree of association (relatedness) between units of knowledge (Anderson & Bower, 1973). Furthermore, it is these units of knowledge which in part direct behavior.

The development of the Pathfinder methodology has provided a means for accessing the cognitive associative networks of individuals (Dearholt & Schvaneveldt, 1990). Pathfinder is an algorithm which analyzes similarity ratings of pairs of entities to generate a graphical representation of an associative network.

The goal of the present research was to use Pathfinder to examine the organization of sexual and aggressive information in undergraduate males in an effort to determine if the overlap between sex and aggression occurs at the

cognitive level. Furthermore, using a decision-latency measure, the aim was to illustrate that the semantic organization of such information is in part predictive of behavior.

Literature Review

The vast majority of perpetrators of sexual aggression are men, therefore this literature review is confined to discussion of sexual aggression as perpetrated by males against sexual partners. The aim of the review is to discuss literature demonstrating the overlap between the sexual and aggressive aspects of sexual aggression.

Much research on sexual violence has been conducted using incarcerated offenders, however, other researchers have utilized samples of college students in an effort to delineate predictors and correlates of sexual violence (e.g. Lisak & Roth, 1988; Porter, Critelli, & Tang, 1992). This literature review will focus upon studies using nonclinical samples of males as participants, with a particular focus on college student samples. This focus was chosen because college males served as participants in this study and because differences between convicted sexual offenders and other perpetrators of sexual violence have been suggested in the literature (e.g. Prentky & Knight, 1991; Rapaport & Burkhart, 1984).

Koss, Leonard, Beezley, and Oros (1985) provided some evidence for the interaction of sexuality and aggression in a sample of university participants. These researchers classified participants as sexually assaultive, sexually abusive, sexually coercive, and sexually nonaggressive based on responses to the Sexual Experiences Survey (Koss and Oros, 1982) and using discriminant function analysis assessed the strength of several variables (attitudinal and sexual history) in assigning group membership. Koss et al. concluded that

sexually aggressive males differed from sexually nonaggressive males on a number of variables including rape-supportive attitudes and the view that the combination of sex and aggression is normal.

Factors generally found to be associated with sexual aggression include sexual experience/promiscuity, negative attitudes regarding women, acceptance of interpersonal violence, psychopathy, deviant sexual arousal, hypermasculinity, physical aggression, and a family background of violence (Burt, 1980; Hannan & Burkhart, 1993; Koss & Dinero, 1988; Kosson, Kelly & White, 1997; Lackie & de Man, 1997; Malamuth, Check, & Briere, 1986; Mosher & Anderson, 1986; Quinsey, Chaplin, & Upfold, 1984; Tieger, 1981). Due to the enormity of the literature base in the area of sexual aggression, only those factors relevant to the current study will be discussed.

Two Models of Sexual Aggression

Several models of sexual violence have been proposed including those derived from feminist (Brownmiller, 1975), physiological (Abel, Becker, & Skinner, 1980), evolutionary (Thornhill & Thornhill, 1983; 1992), cultural spillover (Baron, Straus, & Jaffee, 1988), and social-learning (Ellis, 1993) theories. The most comprehensive multivariate model appears to be the confluence (interaction) model of aggression (Malamuth, Heavey, and Linz, 1993; Malamuth et al. 1991) . As first described, the confluence model proposes that several factors must converge for sexual aggression to occur. Specifically, sexual aggression results from the combination of motivation, disinhibition, and opportunity variables. Malamuth et al. (1991;1993) used

structural equation modeling to examine the predictive strength of several variables including early risk factors (e.g. history of physical and sexual abuse), delinquency, sexual promiscuity, attitudes supporting violence, and hostile masculinity. Malamuth et al. (1993) concluded that an interaction of the sexual promiscuity and hostile masculinity paths was the best predictor of sexual aggression. Furthermore, they suggested that “sexual coercion may be best conceptualized as both an aggressive and a sexual act” (p.90).

Malamuth et al. (1991) summarized the key aspects of the confluence model and its relationship to sexual and nonsexual aggression. According to Malamuth et al.,

a hostile home environment increases involvement in delinquency, which affects coerciveness against women through two paths: (a) hostile attitudes and personality characteristics that contribute to coerciveness, in both sexual and nonsexual interactions with women as well as social isolation from them, and (b) a high level of sexual promiscuity, which, particularly, in interaction with hostility, leads to sexual aggression (p.672).

The utility of this model has been demonstrated using a cross-sectional approach with a national sample of college students (Malamuth et al., 1991) and longitudinally (Malamuth, Linz, Heavey, Barnes, & Acker, 1995). Malamuth et al. (1995) suggest that the expression of sexual aggression might result from the activation of “associative networks” (p. 367). Malamuth et al. define an associative network in accordance with Berkowitz’s (1993) theory, as an interconnection of feelings, ideas, memories, and motor propensities. They contend that individual differences in the presence of one or more identified “risk factors” (impersonal sex, masculine role stress, proneness to general

hostility, violence attitudes, and hostile masculinity) increases the likelihood of sexual aggression by increasing the likelihood of network activation.

Most recently, Dean and Malamuth (1997) reported on further exploration of the utility of the confluence model. Using structural equation modeling and regression analysis, the relationship of five risk factors (family violence, nonconformity, sexual experience, attitudes supporting violence, and hostile masculinity) to reported past sexual aggression and imagined sexual aggression was explored. Additionally, the moderating role of social desirability and a dominance (self-centeredness) versus nurturance (sensitivity to others) dimension was investigated. Generally, self-centered males scoring above the median on measures of four or more risk factors (high risk) were more likely to report having been sexually aggressive than nurturant males. The dominance/nurturance dimension did not affect the degree to which high-risk males imagined engaging in sexual aggression. Dean and Malamuth concluded that "the degree to which risk factors translate into actual aggression depends on the extent to which a man is relatively self-centered versus sensitive to others' feelings" (p. 453).

In 1995, Malamuth et al. concluded that it was the "confluence" of several key variables that characterized sexual aggressors (p.367), Dean and Malamuth's (1997) conclusion represents the addition of further constraints upon the model and yet expansion of the model to include imagined sexual aggression. Dean and Malamuth suggest that since self-centeredness did not appear to moderate imagination of sexual aggression, there is likely an

underlying risk factor present in individuals who imagine engaging in sexual aggression but do not display the overt behavior. It was the present author's contention that invocation of an information processing approach to the domain of sexual aggression might provide a means of exploring an underlying cognitive dimension that might be fueling imagined and engaged in sexually aggressive behavior. Malamuth et al. (1995) suggested differences in the activation of associative networks might account for differences in the expression of sexually aggressive behavior. However, there appears to be no published research addressing this issue.

Hall and Hirschman (1991) describe another multivariate model termed the quadripartite model of sexual aggression. Unlike Malamuth et al.'s (1991; 1993) confluence model, Hall and Hirschman's model has not been empirically validated. This model is discussed here due to its inclusion of cognitive factors in the explication of sexual aggression. Hall and Hirschman contend the essential elements increasing the likelihood of someone engaging in sexually aggressive behavior are physiological arousal, distorted cognitions which justify the use of aggression, affective dyscontrol, and personality problems (abuse history/antisocial practices). Hall and Hirschman further suggest that a typology of sexual aggressors be created based on the prominence of one of the aforementioned elements. That is, aggressors would be classified on the basis of which element served as a "motivational precursor"; the driving force behind the aggressive act which causes the person to pass the threshold of inhibition and engage in sexual aggression (p. 665, Hall & Hirschman, 1991). The

authors propose four subtypes of sexual aggressors. For the first subtype, physiological arousal is the motivational precursor. Specifically, sexual arousal is associated with aggression against women and aggression itself may be sexually stimulating due to repeated pairing of violent and erotic stimuli. The second subtype is characterized by distorted cognitions regarding the acceptability of sexual aggression; sexual aggression is justified. The third subtype is characterized by lack of affective control in which the act of sexual aggression is typically impulsive and opportunistic. For the fourth subtype the motivational precursor is a personality problem. Generally, the act of sexual aggression is likely part of a longstanding pattern of rule violation (antisocial behavior).

Whether due to a history of sexual promiscuity, the development of hostile and distorted views of women, lack of emotional control, deviant arousal patterns or antisocial tendencies, the interconnection of sex and aggression on a physiological, cognitive, and behavioral level could be said to be the main factor postulated to lead to the expression of sexual aggression. This study was designed to explore this hypothesized interconnection at the cognitive level.

Sexual Aggression in Nonincarcerated Males

Admission of past sexual aggression. Research examining sexual aggression among nonincarcerated males has typically employed the Sexual Experiences Survey (SES; Koss & Gidycz, 1985; Koss et al., 1987; Koss & Oros, 1982) or some modification of the SES (Lisak & Roth, 1988). In a

prototypical study, males are administered the SES in a questionnaire and/or an interview format to assess experience with situations involving various levels of sexual aggression. Levels assessed by the SES range from verbal coercion to obtain sexual contact to threatened use of force to actual use of force. Typically, participants are classified into groups based on self-reported experience with differing levels of sexual aggression. Participants' responses to a variety of measures designed to assess the aforementioned factors which have been found to be correlated with sexual aggression are commonly compared as a function of classification.

Ouimette (1997) utilized the SES to obtain a group of college males who admitted engaging in rape or attempted rape. Ouimette found that sexually aggressive men had more impulse control problems and antisocial personality features than men not admitting past sexual aggression.

Muehlenhard and Linton (1987) developed a sexual aggression questionnaire which asked respondents about past dating experiences but which appears in less frequent use in the literature than the SES. The questionnaire included a list of 17 sexual activities and participants were asked to indicate activities that the woman engaged in willingly, the man tried to engage in without the woman's consent, and the man engaged in against the woman's wishes. Variables identified as risk factors for the occurrence of sexual aggression included several attitudinal stances (acceptance of interpersonal violence, traditional sex roles, and rape myths), situational factors (e.g. who initiates the date, who pays, etc.), and perceived miscommunication

about sex. In a recent review of date rape risk factors, Marx, Van Wie, and Gross (1996) discuss contextual variables such as prior episodes of resistance on the part of the woman which might contribute to the likelihood of date rape occurring.

Generally, use of the SES has resulted in reliable and valid information regarding respondents past history of sexual aggression. Individual differences in attitudes and personality characteristics correlate with responses to the SES. Those individual differences relevant to the proposed study will be discussed later.

Admitted likelihood of engaging in sexual aggression. A substantial body of research is devoted to the assessment of likelihood of engaging in sexual aggression. Measurement of the likelihood of engaging in sexual aggression is different from admitted past sexual aggression in that admitted likelihood is not an indication of actual behavior but rather is an indication of a proclivity or future possibility of engaging in sexual aggression. This line of research was begun in order to explore the validity of claims made by feminist writers that all men have a proclivity to rape (Malamuth, 1981). Initially this question was explored by asking college students to indicate the degree of likelihood (on a Likert scale) that they would rape if they could be assured they would in no way be caught or punished. Preliminary studies indicated that a substantial portion (20-35%) of college men admitted a likelihood of raping if assured of no consequences for the behavior (Malamuth, 1981). Correlations between admitted likelihood of raping and variables such as callous attitudes

toward rape, acceptance of false/stereotyped beliefs about rape, sexual arousal to rape portrayals, and aggression towards women were delineated (Malamuth, 1981; Tieger, 1981). Malamuth (1981) contended that those admitting a likelihood of raping were more similar to convicted rapists than those admitting no likelihood. Similar correlations were obtained by Murphy, Coleman, and Haynes (1986) in their study of a community sample of males.

Greendlinger and Byrne (1987) found that college men reporting coercive sexual fantasies were more likely to admit a likelihood of raping. In addition, of those men indicating a high degree of likelihood of raping, 100% provided the researchers with a written example of a coercive sexual fantasy even though this task was optional. Greendlinger and Byrne concluded that fantasy is likely a large component of sexually aggressive behavior.

In 1983, Briere and Malamuth reported a study which included the addition of a second question to the likelihood of engaging in sexual aggression paradigm. The question was embedded with others and asked participants to indicate their likelihood of using force rather than specifically engaging in rape. This question was added to explore the proposed sexual aggression continuum (Brownmiller, 1975). Responses from 352 male psychology students to a variety of questionnaire measures were obtained. Briere and Malamuth reported that rape supportive attitudes and sexual experience were the best predictors of self-reported likelihood of engaging in rape and/or using force. Responses to attitude questionnaires generated by participants admitting a likelihood of using force reportedly fell between those admitting no likelihood of

aggression and those admitting a likelihood of raping. Briere and Malamuth cited this finding as preliminary evidence of the validity of the sexual aggression continuum. One criticism of this study is that the question used to assess likelihood of force does not appear to be explicitly related to sexual aggression. Participants were asked to indicate the likelihood of engaging in several acts if lack of detection and punishment were guaranteed including "forcing a female to do something she didn't really want to do" (p. 318). Although the other acts listed (e.g. bondage, group sex) clearly imply a sexual context, it does not seem clear that participants would necessarily view the force question as pertaining to forcing a woman to engage in a sexual act. The format used in this study appears to be a precursor to the creation of the Attraction to Sexual Aggression Scale (Malamuth, 1989a,b).

Petty and Dawson (1989) included a question regarding the likelihood of using physical force to get a woman to have sex in their study exploring differences between groups of college men (N=188) classified as using either a high or low degree of physical force in sexual situations. Admitted likelihood of using force predicted group membership. Petty and Dawson concluded from the responses of participants that a large percentage of college men use aggressive behaviors to obtain sex and those condoning the use of force in sexual situations can be differentiated from other men on the basis of personality traits (e.g. dominance, impulsivity, aggression).

Malamuth (1988a) discusses methods of combining information from measures of past behavior and present likelihood of engaging in sexual

aggression. He suggested grouping participants into four categories based on responses to the SES and admitted likelihood of using force and/or raping. The four categories generated represent all possible combinations of past history of sexual aggression (yes or no from the SES) and current desire to rape and/or use force (yes or no) in a sexual situation. Other suggestions include differentiating persons along the likelihood of force/rape dimension in combination with SES categories such as sexually coercive, sexually abusive, and sexually assaultive. Generally, Malamuth suggests that more comprehensive information could be gained by combining measures of past behavior with future likelihood.

As a result of criticism regarding the reliability and validity of explicitly questioning participants using only one or two questions, Malamuth (1989a,b) developed the Attraction to Sexual Aggression Scale (ASA). Originally, this scale was comprised of 14 items embedded within 66 other items (Malamuth, 1989a). This scale was designed to obtain information regarding attraction to and likelihood of engaging in sexually aggressive behavior along with information regarding conventional and unconventional sexual behavior. Malamuth (1989a) clearly indicated that self-reported likelihood of using force and/or raping should be regarded as measures of the "lure" of sexual aggression or the idea that sexual coercion is arousing rather than a behavioral prediction of any sort. Malamuth (1989b) refined this measure resulting in a 10-item format embedded within 55 other items. Generally, scores on the ASA have been found to correlate with sexual arousal to sexually aggressive stimuli,

antisocial characteristics, attitudes supporting violence against women, and self-reported engagement in sexually aggressive behavior (Malamuth 1989a,b). In addition, the scale appears to be a more comprehensive method of assessing attraction to sexual aggression than the one- or two-item format used previously (Malamuth, 1989a,b).

Researchers utilizing either the one/two question format or the Attraction to Sexual Aggression Scale have generally found acceptance of violence against women, belief in rape myths and sexual arousal to rape depictions to be correlated with admitted likelihood of engaging in sexually aggressive behavior (e.g. Briere & Malamuth, 1983; Malamuth, 1981; Malamuth, 1983; Tieger, 1981). It should also be noted that these same factors have been found to correlate with laboratory analogues of sexually aggressive behavior (e.g. Hall & Hirschman, 1994; Malamuth, 1983; Malamuth, 1988b).

Sexual aggression and hypermasculinity. Mosher (1991) in a recent review of the relationship between the macho personality structure and sexuality, defined hypermasculinity as consisting of "manly actions in gender-relevant scenes that embody dispositions toward toughness, daring, virility, and violence" (p.200). Macho men display aggression, toughness, callous sexuality, and cool self-control. Mosher postulated that through the process of socialization some men develop a macho script. A script is defined as "a set of rules for ordering information in a connected set of scenes sharing a family resemblance" (p.210). Scripts are rules of behavior generated by affective responses to specific scenes. Included in the macho script is an emphasis

on "the use of power over women to gain coitus as a reward for and as an entitlement for being a hypermasculine man" (p.231). Not surprisingly, machismo appears to be correlated with sexual aggression.

Mosher and Sirkin (1984) developed the Hypermasculinity Inventory (HMI) to measure the presence of macho personality characteristics. The 30-item forced-choice measure is comprised of three subscales: (a) Violence as manly, (b) Callous sexuality, and (c) Danger as exciting. The Cronbach α for the 30-item measure is usually in the high .80s (Mosher, 1991). Research using the HMI indicates that macho personality (.33) and callous sexuality (.53) correlate with a history of sexual aggression (Mosher and Anderson, 1986). In addition, men scoring high on this measure of masculinity are less likely than those scoring low, to express negative feelings regarding imagining themselves sexually aggressing (Mosher & Anderson, 1986).

Other researchers have demonstrated a positive correlation between high levels of masculinity and sexual aggression (Jaffe & Straus, 1987; Smeaton & Byrne, 1987; Tieger, 1981; Vass & Gold, 1995). Malamuth and Thornhill (1994) found that past history of sexual aggression and scores on measures of hostile masculinity predicted whether or not male undergraduates would be verbally domineering toward females. However, Lackie and de Man (1997) failed to show that hypermasculinity was a significant predictor of sexual aggression in their sample of college men. According to Lackie and de Man, the nonsignificant contribution of hypermasculinity in regression analysis was likely due to overlap with other variables included in their study such as

fraternity membership and sex role stereotyping which were significant predictors of sexual aggression. Therefore, hypermasculinity is still a potentially important component of sexually aggression. In addition, Malamuth et al.'s (1991) model of sexual aggression includes hostile masculinity as one of the two major pathways leading to the expression of sexually aggressive behavior. Due to the apparent importance of this personality characteristic, a measure of hypermasculinity was included in the current investigation.

Malamuth's research has typically employed a composite of scales measuring sexual dominance, hostility toward women, acceptance of interpersonal violence, motives for sexual behavior, or rape myth acceptance to index the hostile masculinity pathway (Malamuth et al., 1995; Dean & Malamuth, 1997). According to Malamuth and Thornhill (1994), hostile masculinity has typically been measured using a combination of three constructs, Hostility Toward Women (Burt, 1980), a measure of dominance in sexual relations (Malamuth, 1988b), and Acceptance of Interpersonal Violence (Burt, 1980). However, no scales have been specifically designated as direct measures of this construct. Furthermore, Schewe and O'Donohue (1998) reported inadequate internal consistency ($\alpha=.48$ & $.59$) and test-retest reliability ($r=.56$) for the Acceptance of Interpersonal Violence Scale (Burt, 1980). Since this scale often comprises 1/3 of the hostile masculinity index, use of another measure (the HMI) with better internal consistency ($\alpha=.71-.79$) seemed prudent. In addition, use of Mosher and Sirkin's (1984) HMI appears to be a more direct

measure of the hypermasculine sexual script and therefore relevant to research applied from an information processing approach.

Sexual aggression and sexual promiscuity/impersonal sex.

Malamuth et al.'s (1991) model of sexual aggression includes sexual promiscuity/impersonal sex as the second major pathway leading to the expression of sexually aggressive behavior. Age of first sexual intercourse and the number of sexual partners has been used as an index of sexual promiscuity (Malamuth et al., 1991). Malamuth et al. (1995) suggested that sexual preoccupation (the tendency to be absorbed in thinking about sex and perhaps engaging in sexual behavior) and frequency of infidelity might also comprise part of the sexual promiscuity/impersonal sex pathway. In Malamuth et al.'s model (1991;1995), precocious sexual behavior develops from early assumption of adult roles and, particularly in delinquent males, is likely characterized by the use of force or coercion to obtain sex. Furthermore, sexually aggressive males appear to have a greater interest in impersonal sex than nonaggressive males (Malamuth et al., 1995). Researchers have found that males admitting engagement in date rape report participating in more sexual activity and having had their first sexual encounter at an earlier age than males who do not admit engaging in sexual aggression (Kanin, 1985; Koss & Dinero, 1989).

Given the stated importance of sexual promiscuity as a correlate of sexually aggressive behavior, a measure of sexual promiscuity/preoccupation was included in this study. This measure of promiscuity/preoccupation was

comprised of age of first sexual encounter, number of sexual partners, sexual preoccupation, and frequency of infidelity.

Network Theory and Sexual Aggression

According to network theory, "...information about events or behaviors has some unit representation and ... there is connectivity among representations" (Lang, 1994; p.218). From this viewpoint, knowledge is a group of associated concepts and concepts are represented as nodes (Ross & Bower, 1981). Nodes are linked due to similarity along some dimension and the more links between two nodes, the more related two concepts are said to be (Collins & Loftus, 1988). Ross and Bower (1981) state that clusters of information are formed by the intersection of several links. A network functions such that incoming stimuli activate a specific node or set of nodes. Activation spreads to adjoining nodes that are linked to the originally activated concept (Lang, 1985). Repeated activation of links causes strengthening of connections (Ross & Bower, 1981). Activated concepts are more accessible from memory than inactivated concepts. Priming studies are typically used to index the level of activation and connection between prime and target concepts (McKoon & Ratcliff, 1992). Generally, the more easily accessed a concept, the more likely the concept is to be used in the process of interpreting incoming information and generating response outputs. The object of study in this scheme is the individual concept and relationships between concepts. Many elaborations of basic network theory have been offered including the notions of scripting, schemas, and Lang's (1979) Bio-informational theory.

Lang's (1979) bio-informational theory states that information is organized as propositions which are relationships among concepts. Lang postulates three types of propositions, semantic propositions which hold information about incoming stimuli, response propositions which direct the output generated based on incoming information, and meaning propositions which result from the combination of the response and semantic propositions. Lang (1994) states, "a memory of an emotional episode can be seen as an information network that includes units representing emotional stimuli, somatic or visceral responses, and related semantic (interpretive) knowledge" (p. 218). According to Lang, emotional memories are "action dispositions" which are about behaviors including sexual approach and fight-flight responses (p. 219). Lang contends that the consistency and interconnectedness of networks may explain persistent behaviors including phobias and unusual sexual arousal patterns. Treatment of such problems involves breaking down the coherence of a network and creating new response patterns, i.e. creating new attachments between information (Lang, 1984).

Berkowitz (1984, 1990) proposed a theory of aggression based on associative network theory. Beginnings of Berkowitz's model were evidenced in his earlier writings in which he proposed that objects or events in the environment were capable of eliciting aggressive responses due to association with aggression and especially rewarded aggression (Berkowitz, 1974). Berkowitz (1984) extensively reviews the effect of exposure to violence on the expression and acceptance of violence. Berkowitz states that exposure to

violence through the media or experimental manipulation primes aggression relevant constructs in memory and results in increased aggressive behavior, acceptance of violence, and the aggressive interpretation of ambiguous stimuli. Priming takes place through the activation of a network that contains thoughts, feelings, and action dispositions with aggressive themes.

In a more current formulation of the model, Berkowitz (1990) contends that "associative networks link specific types of feelings with particular thoughts and memories and also with certain kinds of expressive-motor and physiological reactions" (p. 496). Berkowitz specifically discusses anger and aggression as associatively connected to negative affect. According to this model, persons who experience negative affect are "likely to be angry, have hostile ideas and memories, and to be aggressively disposed" (p. 496). Disruption of the associative link between anger and negative affect only occurs if higher order cognitive processing takes place. Higher order processing may include appraisal of the causes of negative affect and consideration of appropriate reactions in a given context. Berkowitz contends that negative mood experienced in the absence of higher order cognitive processing results in open expression of hostility and anger.

Bushman (1996) uses Berkowitz's (1984; 1990) model as a basis for his hypothesis that aggression-prone individuals have a more elaborate network for aggressive information. According to Berkowitz (1984), violent stimuli prime (activate) other aggression related information, making aggression relevant constructs easily accessible to an individual and thereby more likely to be used

in interpreting information. As Bushman (1998) states, these constructs may be violent ideas, emotions related to aggression, or the drive for aggressive action.

Following this line of reasoning, ease of processing of aggression relevant material should be evident in aggression prone individuals. Potentially, connections between aggressive material and idiosyncratic information may result. Bushman provides a direct test of this theory using the Pathfinder methodology which is discussed in the next section of this paper.

Moving beyond the level of individual concepts to sequences of concepts and events we arrive at the topic of schemas and scripts. "A schema is a large conceptual structure preexisting in memory; it interrelates a number of actors, objects, and properties..." (Ross & Bower, 1981; p.14). The utility of a schema is that it organizes information into categories and facilitates the processing of information. Ross and Bower (1981) demonstrated that word recall is facilitated by the use of schemata. As Ross and Bower describe, words such as "test tube", "litmus paper", "Bunsen burner", and "acid" could be said to fall into the schema "chemistry lab" which would facilitate the organization of this information in memory. Information for which there is no underlying schema is harder to process.

Schemata and scripts allow us to process and store enormous amounts of information with limited use of cognitive resources. That is, "schemata allow us to capitalise on the regularities of events and situations and to make accurate inferences about the real world" (p. 326, Eysenck, 1984).

According to scripting theory, programs for behavior are learned and stored in memory. Cognitive scripts serve as “guides for behavior and social problem solving” (p. 15, Huesmann, 1988). They contain information about what to expect in a given situation and how to act in that situation. For example, when we walk into an office we expect certain events to occur such as the phone ringing or people asking if they can help you while we do not expect other events such as a dog walking up to us. Given this preliminary knowledge about the context, we have cues about how to behave in an office and what is likely to occur.

Huesmann (1988) proposed an information processing model of aggression based on scripting theory. Huesmann suggested that habitual aggressive behavior displayed by children reflects the repeated retrieval and utilization of scripts for social behavior that emphasize aggression. Encoding of aggressive scripts is hypothesized to result from observation of enactment of aggressive behavioral sequences and/or selective attention to environmental cues for aggression due to the person's emotional state (e.g. anger). Cognitive rehearsal of an elaborative nature (e.g. fantasy) is posited to generate increased connectedness of a script. Retrieval may be biased toward aggression scripts due to emotional state, cues in the environment, and/or reinforcement history (past experience with implementation of a script). Furthermore, the actual implementation of a script follows assessment on the part of the child that implementation will lead to positive reinforcement and/or that he or she is capable of executing the script. On a simplistic level, what is

implied by Huesmann's model is that continued aggression occurs due to activation of aggressive scripts which are viewed as a means to achieve positive reinforcement. Activation occurs because aggressive scripts are salient in memory.

Several predictions are suggested by the models discussed previously. Principally, the models imply differences in the organization of semantic networks. As related to sexual aggression, it is possible that sex and aggression link at the cognitive level especially in sexually aggressive individuals. Potentially the cognition precedes the behavior and individuals with a history of, and/or attraction to, sexual aggression have a more elaborate cognitive network than individuals who do not have aggressive histories. If so, perhaps this creates an overlap of sexual and aggressive information. Demare, Lips, and Briere (1993) suggested such an overlap may be the reason for observed positive correlations between the use of pornography and sexually aggressive behavior; "the juxtaposition of sex and violence in the same stimuli may have cognitive impacts, suggesting to the consumer that violence is an acceptable component of sexual behavior with women" (p.297). However, other variables (hostile masculinity, promiscuity, etc.) also appear to be related to network structure. While directionality can not be determined from the results of the present study, differences in the relatedness of word types would elucidate differences in network organization as a function of sexually aggressive behavior. Such a finding would be an important contribution to the literature in that models of sexual aggression now assume multiple causal

factors but do not account for differences in underlying structure regardless of origin. In addition, it is important to establish whether network structure or other variables is the best predictor of responses to measures of sexually aggressive behavior. If such differences in network structure can be established and predictors of behavior can be determined, perhaps the potential to change behavior exists.

Pathfinder Methodology

Given the unobservable nature of cognitive phenomena, the Pathfinder methodology is a significant advance in the area of cognitive science. To reiterate, the basic premise of network theory is that concepts are represented by nodes which are linked. The links represent associations between concepts. A network is the structure that is formed by organizing information in this manner. By creating a graphical representation of an associative network generated by participants' similarity ratings of items, Pathfinder renders the unobservable observable.

Pathfinder networks are determined using an algorithm with two principal parameters. The r -metric determines how the distance between two nodes is computed and q represents the maximum number of links in the paths to be examined in constructing a network (Dearholt & Schvaneveldt, 1990). In order to obtain the sparsest and most psychologically meaningful network, r is typically set at infinity and q at $n-1$ (number of items -1). The setting $r = \infty$ means that similarity ratings will be treated as ordinal (Durso & Coggins, 1990) and path length is equal to the maximum weight along the path (Cooke, 1992).

Pathfinder networks are generated from similarity ratings using the Knowledge Network Organizing Tool for personal computers (PCKNOT; Schvaneveldt, 1990).

Pathfinder provides a graphical representation of the links between concept nodes along with information regarding the strength of association between concepts (link weight) and the complexity of a network (number of links). Pathfinder does not provide clear information on the direction of association between concepts. In addition, a disadvantage of Pathfinder is that presently there is no method for determining on what basis similarity judgments are made (Dearholt & Schvaneveldt, 1990). Furthermore, without additional tools, labeling links between nodes is not possible. That is, although links may be weighted, giving an indication of the strength of association between concepts, the nature of the links or in other words, the type of relationship between concepts is not able to be specified (Cooke, 1992).

The utility and psychological import of Pathfinder networks has been demonstrated. Pathfinder structures have been found to be useful in the prediction of recall of lists of words (Cooke, Durso, and Schvaneveldt, 1986) and the development of human-machine interfaces (Roske-Hofstrand & Paap, 1986; McDonald & Schvaneveldt, 1988). Differences in the network organization of experts and novices in the areas of air-combat (Schvaneveldt et al., 1985), computer programming (Cooke & Schvaneveldt, 1988), electronic warfare (Wyman & Randel, 1998), and locomotive classification (Gammack, 1990) have been identified. Furthermore, changes in the structure of networks

generated by Pathfinder have been observed following enhanced experience with software usage (Kellogg & Breen, 1990), classroom instruction (Goldsmith & Johnson, 1990), and cognitive decline in Alzheimer's patients (Chan, Butters, & Salmon, 1997; Chan, Salmon, Butters, & Johnson, 1995). There is some evidence for differences in the organization of semantic networks for specific information in schizophrenic patients as compared to same age normals as a function of age of onset of schizophrenia (Paulsen, Romero, Chan, and Davis, 1996).

To date no study has employed the Pathfinder methodology in the exploration of sexual aggression. However, researchers have utilized Pathfinder to explore the separate domains of sexuality and aggression. Geer (1996) was the first to apply the Pathfinder technique to the domain of sexuality. Results from that study indicated that gender differences in the organization of sexual information conformed to gender stereotype. That is, males had more links between explicitly sexual words and positively valenced words than females, while females had more links between relationship oriented words and positively valenced words. Therefore, it can be concluded that women have a more complex network for relationship words and men have a more complex network for explicitly sexual words.

Smith, Eggleston, Gerrard, and Gibbons (1996) used Pathfinder to examine the relationship between sexual attitudes and perceived vulnerability to unplanned pregnancy. Based on results from that study, Smith et al. concluded that individuals holding different attitudes toward sex had different cognitive

sexual associative networks. Furthermore, differences in the cognitive relations between sexual information and health information (pregnancy) were obtained. The implication of that research is that differences in the underlying cognitive organization of sexual information may in part direct risky sexual behavior. The authors suggest that programs designed to alter the cognitive organization of such information might lead to positive changes in behavior.

Manguno-Mire and Geer (1998) applied Pathfinder to the organization of sexual information in a group of homosexual and heterosexual males and females. Manguno- Mire and Geer found that heterosexual men had more links on sexual slang words and between sexual slang words and positively valenced words and between formal sexual words and positively valenced words. Heterosexual women and homosexual men had more links on male genitalia words and heterosexual men and lesbians had more links on female genitalia words. The implication of that research is that network structure for sexual information varies as a function of gender and sexual orientation. Although directionality cannot be determined from that study, the interactive relationship between behavior and cognition is clear.

Bushman (1996) examined the cognitive associative networks of individuals scoring high and low on a measure of trait aggression. Bushman hypothesized that high-trait-aggressive individuals have a more extensive cognitive network for aggressive information than low-trait-aggressive individuals. Extensivity was measured by examining connections between aggressive and ambiguous (not generally associated with aggression) items.

Participants in that study rated the similarity of aggressive-aggressive, aggressive-ambiguous, and ambiguous-ambiguous word pairs. A network representation was generated using Pathfinder. Results supported Bushman's hypothesis. High-trait-aggressive individuals had more links between aggressive and ambiguous information than low-trait-aggressive individuals. Based on the results of his study, Bushman concluded that individuals high in trait aggression have more elaborate cognitive associative networks for aggressive information than individuals who do not view themselves as generally aggressive.

Clearly researchers have demonstrated differences in associative network structures using the Pathfinder methodology within the domains of sexuality and aggression. The present study represents an attempt to apply this methodology to the domain of sexual aggression.

Study Rationale

The ability to identify potential perpetrators of sexual aggression and predict the likelihood of repeated incidents of sexual aggression have been primary goals of many researchers and clinicians in the area of sexual aggression. As Hall (1990) points out, the cost to society of undetected dangerousness is high and the cost of misidentification to the potentially innocent individual is also high. Therefore, should a reliable means of predicting sexual aggression be developed, the benefits appear indisputable. Identification of differences in the organization of sexual and aggressive information as a function of engagement in sexually aggressive behavior is a preliminary step in this needed direction. The goal of the present study was to utilize the Pathfinder methodology to gain further understanding of individual differences in sexual aggressive tendencies.

Considerable attention has been paid to delineating the motives for sexual aggression. Researchers have attempted to identify whether motives are primarily sexual or aggressive in nature (Lisak & Roth, 1988; Malamuth, Check, & Briere, 1986; Porter, Critelli, & Tang, 1992). Generally, no clear evidence has been found to adequately support the view that sexual aggression is primarily motivated by one type of motive to the exclusion of the other. Suggestion has been made that perhaps stranger and acquaintance sexual aggression are differentially motivated and that this difference accounts for varying results in studies (Heilburn & Loftus, 1986; Porter et al., 1992). Yet, Hannan and Burkhart (1993) demonstrated a correlation between the use of

physical aggression and sexual aggression in certain groups of college men, however, 25% (n=65) of their sample admitted engaging in sexual aggression but not a significant use of physical aggression within the context of a relationship. It is the view of the present author that the overlap of sexual and aggressive information at the cognitive level may be the underlying factor that fuels the expression of sexually aggressive behavior in certain individuals. In order to explore this hypothesis, research must first be undertaken to demonstrate that differences in the overlap of sexual and aggressive information exist at the cognitive level. Furthermore, the differences must be shown to vary as a function of past sexually aggressive behavior and/or an expressed likelihood of engaging in future sexual aggression. In addition, if the organization of sexual and aggressive information could be found to be a significant predictor of sexually aggressive behavior, the utility of the approach would be further demonstrated. The aim of the present study was to explore sexual aggression in this manner.

In constructing the present study, attention has been paid to articles addressing methodological approaches to assessing sexual aggression. In particular, Porter and Critelli (1992) reviewed 26 studies conducted in the area of sexual aggression using college males. Porter and Critelli presented several issues which they felt should be addressed in future sexual aggression research including: 1) Matching of groups according to level of sexual experience, 2) Asking the same questions in multiple formats in order to assess the consistency of self-reported information, 3) Debriefing participants with

information regarding the myths of sexual aggression and, 4) Assessment of the influence of social desirability. The present study attempted to address some of these issues.

Research Design

One purpose of the present study was to explore differences in semantic network organization as a function of individual history of sexual aggression. The study generally attempted to employ a 4X6 repeated measures design. The four level independent factor was Sexual Aggression Group: (a) acknowledged past history and a future likelihood of engaging in sexual aggression/coercion (group a), (b) acknowledged past history and no future likelihood of engaging in sexual aggression/coercion (group b), (c) no past history of sexual aggression/coercion but an acknowledged likelihood of engaging in sexual aggression (group c) and (d) no past history and no future likelihood of engaging in sexual aggression/coercion (group d). This method of group construction was derived from Malamuth (1988a). Group membership was assigned based on responses to two measures of past sexual aggression and a measure of attraction to sexual aggression.

The six-level repeated measures factor was Word Category. Words related to sexual aggression, aggression, sexuality, interpersonal relationships, and those with a positive and negative valence were rated for similarity by participants in accordance with methodology derived from research in cognitive psychology. Pathfinder networks of words in the six content categories were compared as a function of participants' acknowledged level of sexual aggression (past and future).

Hypotheses

Since the Pathfinder methodology has not been applied to the domain of sexual aggression, all hypotheses relevant to the first purpose of the present study were generated according to network theory, models of aggression (Berkowitz, 1984; 1990; Huesmann, 1988) and Malamuth et al.'s (1991) model of sexual aggression.

Network Similarity

Pathfinder provides an index of the similarity of compared networks. This index is the ratio of links in common between two networks over the number of unique links. Index scores range from 0 to 1 with numbers closer to 1 indicating more similarity between networks.

Previous research has indicated that networks are more similar when comparisons are made within groups sharing a common characteristic than when comparing groups differing on a particular characteristic (Geer, 1996). This difference is particularly evident when the point of comparison between groups is reflected in the composition of the network. Geer (1996) also stated that when individuals have more links in common, their meaning of concepts is more congruent. Malamuth (1989b) indicated that men scoring low on measures of past sexual aggression but high on measures of attraction to sexual aggression (likelihood of engaging in sexual aggression), were more similar in attitudes and sexual arousal to men scoring high on measures of past sexual aggression than those scoring low on both measures. Therefore, based on this information the following hypotheses are offered:

Hypothesis 1. It was hypothesized that networks generated from participants classified into the same sexual aggression group would be more similar than networks generated from participants in different sexual aggression groups. That is, in accordance with previous research (Geer, 1996), semantic networks were expected to be more similar when compared within groups than between groups. To examine this hypothesis, similarity scores within groups were compared to similarity scores between the groups.

Hypothesis 2. Based on Malamuth's (1989b) statement, it was hypothesized that networks would be most similar for groups of participants admitting a past history of sexual aggression/coerciveness and/or a likelihood of engaging in sexually aggressive behavior (groups a-c). Specifically, the network generated by group d (no past history and no future likelihood of engaging in sexual aggression) was hypothesized to differ significantly from groups a-c. To examine this hypothesis, similarity scores between the networks for groups a-d were compared.

Links Within Word Categories

Pathfinder provides information regarding the number of links each individual has between words within each category. More links within a category of words is posited to be indicative of a more complex meaning structure for the knowledge domain reflected in the category.

According to network theory, increased complexity of a network is created by repeated activation and strengthening of associations. If one assumes individuals engaging in past sexual aggression and/or admitting a

likelihood of engaging in future sexual aggression have a network for sexuality that includes both sexual and aggressive elements and that this network is activated when a sexual context is provided, the experimental conditions of this study should have provided ample activation such that the saliency of all information relevant to sexuality was able to indexed.

Hypothesis 3. It was predicted that there would be an interaction of group membership and word category such that participants in group a would produce more links within the sexual aggression word category than participants in groups b-d and group d would produce the least number of links within this word category. At this time our understanding of the differences between individuals admitting either a past history of sexual aggression or a likelihood of engaging in sexual aggression is not explicit enough to make further predictions regarding within category differences. To test this hypothesis, comparisons across groups (a-d) were made using the average numbers of links per word category.

Links on Individual Words

Examination of the number of links on specific words contained in a network provides an index of the centrality of a word to the domain investigated. Centrality might alternatively be defined as importance in that words with more links are considered to have more associates within the domain of study. For the purposes of this study, words with more links have more associates within the domain of sexual aggression.

Hypothesis 4. Individuals indicating past experience with sexual aggression/coercion and/or a likelihood of engaging in sexual aggression (groups a-c) were hypothesized to have the most links on sexual aggression words as compared to other word categories. Individuals not indicating past experience with sexual aggression/coercion or a likelihood of engaging in sexual aggression (group d) were hypothesized to have fewer links on sexual aggression words as compared to words from other categories. These hypotheses stem from the notion that sexual aggression is likely part of the domain of sexuality for individuals indicating sexually aggressive tendencies but not for those individuals not indicating such tendencies. At this time, it is unclear which sexual aggression words are likely to generate this finding. To examine this hypothesis, the number of links on individual words were calculated for each participant. Comparisons across groups (a-d) were made using the number of links on each word.

Links Between Word Categories

Relatedness between categories can be measured quantitatively by examination of the number of links occurring between members of different categories. Several predictions were made for group differences in between category links.

Hypothesis 5. Primarily, groups of participants admitting a past history of sexually aggressive behavior and/or a likelihood of engaging in sexually aggressive behavior (groups a-c) were hypothesized to have cognitive networks in which the overlap between sexual and aggressive information is extensive.

Therefore, these groups of participants were expected to produce more links between the sexual and aggression word categories and the sexual and sexual aggression word categories than the group of participants admitting no history of sexual aggression/coercion and no likelihood of engaging in future sexual aggression (group d).

Hypothesis 6. It was further hypothesized words from the sexual aggression and aggression categories were more likely to be linked to positively valenced (positive) words than negatively valenced (negative) words for groups a-c because potentially sexually aggressive individuals are more likely to associate aggression and sexual aggression with positive affect than negative affect. The opposite effect was predicted for group d. That is, this group was predicted to have fewer links between the sexual aggression and aggression categories positive word category than the negative word category.

Hypothesis 7. In addition, participants reporting no history of sexual aggression/coercion and no likelihood of engaging in future sexual aggression (group d) were expected to produce more links between the aggression and sexual aggression word categories and the negative word category than the other groups. No predictions based on group membership were made regarding the number of links between the sexual word category and the positive or negative word categories because there is no information to suggest that the domain of sexuality as a whole should possess any particular valence for any specific group of participants.

Link Weights

Link weights provided by Pathfinder generally can be viewed as a measure of associative strength between concepts. Generally, link weight data should be interpreted with caution as link weights are considered to be an exploratory measure at this time. Of note, link weights are measured on an ordinal scale and therefore require the use of nonparametric statistical procedures. Link weights were compared between-participants for the word categories hypothesized to be most relevant to the domain of sexual aggression in manner akin to the comparison of links between word categories. The word category pairings were: sexual with aggression, sexual with sexual aggression, sexual aggression with positive, sexual aggression with negative, aggression with positive, and aggression with negative. It was hypothesized that in addition to differences in the absolute number of links between word categories, network activation should also be reflected in the strength of association between concepts.

Hypothesis 8. As stated previously, groups of participants admitting a past history of sexually aggressive/coercive behavior and/or a likelihood of engaging in sexually aggressive behavior (groups a-c) were hypothesized to have cognitive networks in which the overlap between sexual and aggressive information is extensive. Therefore, these groups of participants should produce stronger associations (higher link weights) between the sexual and aggression word categories and the sexual and sexual aggression word

categories than the group of participants admitting no history of sexual aggression/coercion and no likelihood of engaging in future sexual aggression (group d).

Hypothesis 9. In addition, groups a-c were expected to produce stronger links between the sexual aggression and aggression word categories and the positive word category than the negative word category because potentially sexually aggressive individuals are more likely to associate aggression and sexual aggression with positive affect than negative affect. The opposite pattern was predicted for group d with stronger links between the sexual and sexual aggression word categories and the negative word category.

Hypothesis 10. Participants reporting no history of sexual aggression/coercion and no likelihood of engaging in future sexual aggression (group d) were also predicted to produce stronger links between sexual aggression word category and the negative word category than the other groups. Again, no predictions based on group membership were made regarding the strength of links between the sexual word category and the positive or negative word categories because there is no information to suggest that the domain of sexuality as a whole should possess any particular valence for any specific group of participants.

The Confluence Model and Beyond

As reviewed previously, the confluence model of sexual aggression posits two major pathways, hostile masculinity and promiscuity, which lead to the expression of sexually aggressive behavior (Malamuth, et al., 1991). The

second aim of the present study was twofold; 1) to test whether differences in hypermasculinity and promiscuity/preoccupation vary as a function of individual history of sexual aggression/coercion as implied by the confluence model and, 2) to test the hypothesis that information obtained from Pathfinder analysis could be a significant predictor of behavior relevant to sexual aggression. To examine these areas, participants' responses to an analogue measure of sexually aggressive behavior (Marx and Gross' (1995) Date Rape Discrimination Task) and a variety of measures indexing variables previously found to be related to sexual aggression (hypermasculinity, attraction to sexual aggression, sexual promiscuity/preoccupation, and past history of sexual aggression) were obtained. Information from Pathfinder analysis, specifically, the number of links between sexual and aggression, sexual and sexual aggression, and sexual aggression and positive word categories was also utilized. Of note, although Porter and Critelli (1992) stated that participants should be matched on extent of sexual experience in order to offset the potential moderating effect of experience in studies involving episodes of sexual aggression, such a matching process would confound the measurement of sexual promiscuity as described by Malamuth et al. (1991; 1995). Therefore, participants in the present study were not matched according to sexual experience. Level of sexual experience was assessed and served as a partial index of sexual promiscuity.

Hypothesis 11. It was hypothesized the participants indicating a past history of sexually aggressive/coercive behavior and/or a likelihood of engaging

in sexually aggressive behavior (groups a-c) should have higher levels of hypermasculinity and sexual promiscuity/preoccupation than participants indicating no history of sexual aggression/coercion and no likelihood of engaging in future sexual aggression (group d). This hypothesis stems from the confluence model of sexual aggression which suggests that two pathways leading to sexual aggression include hostile masculinity and promiscuity.

Due to the ethical constraints involved in studying sexually aggressive behavior, several researchers have developed analogue methods for evaluating behavioral manifestations of sexual aggression. The Date Rape Discrimination Task (Marx & Gross, 1995) represents one such attempt. This procedure involves recording the length of time participants wait to indicate that a man in an audiotaped interaction should cease making sexual advances (decision latency time). To date, six published studies have utilized the Date Rape Discrimination Task to explore a variety of correlates of sexual aggression (Bernat, Stolp, Calhoun, & Adams, 1997; Bernat, Wilson, & Calhoun, 1999; Gross, Weed, & Lawson, 1998; Marx & Gross, 1995; Marx, Gross, & Juergens, 1997; Van Wie, Gross, & Marx, 1995).

Marx and Gross (1995) demonstrated that longer decision-latencies by male participants were significantly related to personal experience with token resistance (i.e. a woman saying no when she really meant yes), perceived token resistance (as displayed by the woman on the tape), and higher levels of rape myth acceptance. Van Wie, Gross, and Marx (1995) found similar results using female participants. That is, decision latencies were longer when the

woman on the tape was described as offering token resistance on previous dates as compared to no previous resistance. Van Wie et al. also found that women with prior experience as victims of sexual aggression had longer decision latency times as compared to women with no history of victimization.

In a study by Gross, Weed, and Lawson (1998) male and female participants rated the intensity of the woman's refusal attempts on the Marx and Gross (1995) tape in 15 second intervals. Male and female participants did not significantly differ in their ratings of refusal intensity and refusal intensity ratings appeared to be mediated by refusal behaviors during a prior segment. That is, if in a prior segment no refusal attempt was made, the next refusal attempt segment was rated of lower intensity than segments following a refusal attempt. Gross et al. concluded that sexual activity following a refusal attempt may reinforce aggressive behavior by the partner attempting to prompt further sexual activity.

Participants listened to Marx and Gross' (1995) audiotape and decision latency was recorded via computer timer. Analysis was conducted to explore differences in decision latency times as a function of group membership. Decision latency times were compared between sexual aggression groups.

Hypothesis 12. It was hypothesized that decision latency times to the Date Rape Discrimination Task would be longer for participants indicating a past history of sexual aggression/coercion (groups a & b) than for those not indicating such a history (groups c & d). This hypothesis was based on the fact that individuals who have engaged in sexually aggressive behavior are not

likely to believe that a man's advances have gone too far at the same point in time as individuals who have not engaged in such behavior. Participants in group d were hypothesized to have the shortest decision latency times due to their likely view that sexually aggressive behavior is unacceptable. Decision latency times were not hypothesized to differ on the basis of social desirability since measures of attitudes relevant to sexual aggression, attraction to, and admission of past sexual aggression appear to correlate weakly with measures of social desirability (Bohner et al., 1998; Malamuth, 1989b). In addition, Bernat, Calhoun, and Adams (1999) obtained a nonsignificant correlation between a measure of social desirability and decision latency times.

Hypothesis 13. As suggested by network theory, network structure and behavior are presumed to be intimately connected. That is, if the overlap of sexual and aggressive information is a construct relevant to the manifestation of sexually aggressive behavior, indices of network organization relevant to the association of sexual and aggressive information should be significant predictors (account for the most variance) of decision latency times. As stated previously, the number of links between sexual and aggression, sexual and sexual aggression, and sexual aggression and positively word categories served as indices of network organization. Other variables previously found to be relevant to the domain of sexual aggression served as secondary predictors of decision latency times. Network organization and each of the aforementioned variables related to sexual aggression were entered as

predictor variables in a regression analysis to determine the best predictor(s) of responses to the Date Rape Discrimination Task.

Methods

Participants

Participants were 352 heterosexual male undergraduate students over the age of 18 attending a large southern university. Participants received extra course credit in return for their participation in the study according to university and individual class guidelines. Participants completed questionnaires requesting information regarding sexual experience and sexual aggression. However, since these questionnaires were completed in the final phase of the study, no participants were initially excluded from participation in the study. Due to this methodological constraint, although a large number of subjects completed the study, only data obtained from those participants indicating prior sexual experience and whose native language was English were included in the final statistical analysis. Eliminated from all analyses were 49 participants indicating no sexual intercourse experience, 8 homosexual participants, 2 bisexual participants, and 2 participants who did not fully complete the questionnaires.

Membership in each of the sexual aggression groups was assigned based on participants' responses to measures of past sexual aggression (SES, CTS2) and future likelihood of engaging in sexual aggression if assured of no consequences for the behavior (ASA). The scales used to assess these areas of sexual aggression are described in the instruments section of this paper. Participants indicating ≥ 1 occurrence of sexual aggression, coerciveness, threatened sexual aggression, and some future likelihood of engaging in rape or

the use of force to obtain coitus comprised group a (acknowledged past history and a future likelihood of engaging in sexual aggression). Participants indicating ≥ 1 occurrence of sexual aggression, coerciveness, or threatened sexual aggression but no likelihood of engaging in rape or the use of force to obtain coitus comprised group b (acknowledged past history but no future likelihood of engaging in sexual aggression). Those participants indicating no occurrences of sexual aggression, coerciveness, or threatened sexual aggression and some likelihood of engaging in rape or the use of force to obtain coitus comprised group c (no past history but future likelihood of engaging in sexual aggression). Participants indicating no occurrences of sexual aggression, coerciveness, or threatened sexual aggression and no likelihood of engaging in rape or the use of force to obtain coitus comprised group d (no past history and no future likelihood of engaging in sexual aggression). Malamuth (1989b) contended that dichotomizing responses to sexual aggression measures has proven useful in his past research and is acceptable because it is likely that "...the strongest difference occurs at the level of those who totally rule out the possibility of engaging in the behavior, as compared to those who conceive of some possibility of participating in it" (p. 331).

Examination of the previous research conducted to construct the ASA reveals 15-26% of participants (sample sizes of 124, 159, and 288) indicated some likelihood of raping and 38-58% (sample sizes of 86, 117, and 288) indicated some likelihood of using force if assured of no consequences for either behavior. Combining likelihood of rape with likelihood of force conformed

to Malamuth's (1988a) suggestion and also increased the chance of obtaining an adequate number of participants in each sexual aggression group.

A preliminary study conducted by Shively and Lam (1991) comparing the outcomes of several studies examining sexual aggression in college men indicated that response rate and the proportion of participants' admitting sexual aggression is higher in samples obtained through classroom recruiting as compared to random selection. Participants were obtained via classroom recruiting, campus-wide advertisements, and recruiting assisted by athletic department and fraternity advisors. Since participants volunteered for this study and were assured of anonymity, it is believed the atmosphere was conducive to high participation rates and honest responding. Irrespective of the efforts made to increase participation, the final sample consisted of 81 participants in group a, 111 participants in group b, 11 participants in group c, and 88 participants in group d. Due to the fact that only 11 of 352 males could be classified into group c, this group was eliminated from all analyses. Demographic information for the three remaining groups is presented in Table 1. The groups did not significantly differ in age, ethnicity, or year in college. All groups were comprised of predominately Caucasian males who were beyond the first year in college.

Table 1

Demographic Information

Characteristic	Group			Statistical Test
	a	b	d	
	(n = 81)	(n = 111)	(n = 88)	
Age				
Mean	20.43	21.09	20.70	$F(2,271) = 1.05$
SD	(2.30)	(3.92)	(2.70)	
Ethnicity				
Caucasian	63 (79%)	90 (83%)	78 (90%)	$X^2(2 DF) = 3.75$
Noncaucasian	17 (21%)	18 (17%)	9 (10%)	
College Year				
Freshman	15 (19%)	21 (19%)	15 (17%)	$X^2(2 DF) = .123$
Upperclassmen	66 (81%)	90 (81%)	73 (83%)	

Note. All tests nonsignificant at $p > .05$)

Stimuli

Selection of words for use in the word rating task that is submitted to Pathfinder analysis is a crucial element of this study. The words chosen must be representative of the domains of interest. Six categories of words were used in this study: sexual words, aggressive words, sexually aggressive words, positively valenced words, negatively valenced words, and interpersonal relationship words. The relationship words were taken from a previous study conducted in this laboratory (Geer, 1996) for which 38 undergraduates categorized the words (tender, affectionate, and caring) into the interpersonal relationship category with an average percentage of agreement of 93.86%. Pilot research was conducted to generate a list of words falling within the other five content categories. Initially, 12 graduate students (8 female and 4 male) in psychology were asked to generate a list of words falling in to the five content areas. The mean age of the participants was 26.83 (SD= 4.99). Ten words in each content area were selected based on frequency analysis for use in the pilot study. For the pilot study, 51 undergraduate males, age 18 or older, attending classes at the same university as participants in this study were asked to categorize a list of 50 words into the five content areas. The mean age of participants was 20.41 (SD= 2.37). Two participants were excluded from analysis due to the fact that their native language was not English. Based on frequency analysis, a total of 3 words per category were obtained for use in constructing the word rating questionnaire. The largest discrepancy in categorization occurred with the sexually aggressive words. That is, although

for the other word categories the average percentage of agreement in categorization was 92.9% (range = 86-96.96), the percentage of agreement for the sexually aggressive words was only 71.43%. The relatively poor agreement among participants in the categorization of sexually aggressive words reflects the difficulty of obtaining words which exclusively fall into the sexually aggressive word category. This word category was not dropped from further use despite this discrepancy in word choice but any conclusions drawn regarding sexually aggressive material must be regarded with caution since choice of other words might significantly alter the results. A list of the words obtained for use in this study may be found in Appendix A.

Instruments

Sexual Experiences Survey (SES). The SES is the most widely used instrument for assessing the history of sexual aggression in college-aged samples (Porter & Critelli, 1992). The current version of the SES is a 10-item measure assessing experience with the use of degrees of tactics (coercion, threat, use of force) to achieve sexual contact (Koss & Gidycz, 1985; Koss, Gidycz, & Wisniewski, 1987). Koss and Gidycz (1985) indicate that the internal consistency (Cronbach α) of the items is .89 for men and assessment of test-retest reliability (one week) yielded 93% agreement between responses. In addition, these researchers indicate that comparison of responses to the SES and responses during an interview regarding sexual aggression correlated .61 ($p < .001$) with only 3% of men recategorized to a higher level of sexual aggression based upon interview. The SES was modified for use in the current

study to include a way for participants to indicate how many times they have experienced each of the stated scenarios and to substitute the wording “a woman” with “a partner”. The modified version may be found in Appendix B. Participants indicating ≥ 1 occurrence of any force or threatened force item (#s 5-10) or any coercive item (#s 2-3) were classified as having a past history of sexual aggression.

Sexual Coercion Scale of the Revised Conflict Tactics Scales

(CTS2). Straus, Hamby, Boney-McCoy, and Sugarman (1996) devised the CTS2 as a measure of the use of psychological and physical aggression by partners in a relationship. The sexual coercion scale is a 7-item scale which assesses the frequency of coercive behavior used to get a partner to “engage in unwanted sexual activity” (Straus et al., 1993. p.290). Use of this scale was intended to serve as a method of obtaining redundant validity. The sexual coercion scale has an α of .87, and item-total correlations range from .34 to .74.

Straus et al. indicated that the CTS2 has been demonstrated to have adequate convergent and discriminant validity. Participants responded to items on the sexual coercion scale using an 7-point scale corresponding to a separation of frequency of coercive incidents ranging from 0 to over 20. Questions included: a) made my partner have sex without a condom; b) Insisted on sex when my partner did not want to (but did not use physical force); c) insisted my partner have oral or anal sex (but did not use physical force); d) used force (like hitting, holding down, or using a weapon) to make my partner have oral or anal sex; e) used force (like hitting, holding down, or using a weapon) to make my partner

have sex; f) Used threats to make my partner have oral or anal sex; and g) used threats to make my partner have sex. Participants scoring ≥ 1 on any of items b–g were classified as having a past history of sexual aggression.

Attraction to Sexual Aggression Scale (ASA). The ASA is a ten-item inventory imbedded within 55 questions that assesses the likelihood that a person will engage in various sexually aggressive behaviors given a specific set of circumstances (no detection). The ASA has been found to correlate with several variables relevant to sexual aggression including physiological and self-report measures of sexual arousal, antisocial personality characteristics, and attitudes supporting aggression against women (Malamuth, 1989b). The scale was constructed following criticism of the one and two-item approach to assessment of likelihood to engage in rape or use force to obtain sex (Malamuth, 1989a). The ASA has been shown to have high internal consistency ($\alpha=.88$) and the average item-total correlation is .42 (Malamuth, 1989b). Test-retest reliability is approximately .76 for a two month period (Malamuth, 1989a). Schewe & O'Donohue (1996) reported a higher internal consistency rating ($\alpha =.91$) when used with their sample of 117 males. In addition Schewe and O'Donohue used a 5 point Likert scale and classified men as aggressive if their overall score on the ten items was ≥ 15 . Responses to the ASA do not seem to be determined by social desirability as measures of this construct have been found to correlate .14 ($p<.05$) with the ASA (Malamuth, 1989b). Participants respond to the items on this scale using an 11-point Likert rating scale for the first four items and a 5-point Likert rating scale for the last

six items (0= not at all arousing/likely to 4= very arousing/likely). For the purposes of this study, four items were dropped from the Malamuth (1989b) version of the ASA. These items were: "forcing a male to do something sexual he did not want to do", "being forced by a woman to do something sexual you did not want to do" and the likelihood of engaging in "robbery" and "murder". These items were not viewed as relevant to the domain of sexual aggression as perpetrated by males and added length to the scale. In addition, Malamuth (1989a,b) reported that a shorter version (6-item) of the ASA was equally as valid as the longer version and therefore removal of the aforementioned items is not likely to alter the psychometric properties of the measure.

A revised version of the ASA is now available which contains more items and significant rewording of the items (Malamuth, 1998). However, no psychometric properties of this revised version have been reported in the literature. As a result, the revised version was not used in its entirety but one question, "How likely do you think it is that at some point in the future you might try the following activities?" was included in this study as an alternate version of the likelihood question. The resulting ASA scale used in this study is 10 items and can be found in Appendix C (items indicated by * comprise the ASA). Responses to the last four items of the ASA were used to classify participants into the four previously described sexual aggression groups. Scores ≥ 1 (indicating some likelihood) on any of these four items were taken as positive indicators of likelihood of engaging in future sexual aggression.

Word Rating Questionnaire. The word rating questionnaire was created by listing all possible pair-wise combinations of the 18 words generated by pilot research. In order to prevent the occurrence of an order effect, questionnaires were created by placing all word pairs in two randomized orders. Groupings of the same between-categories ratings appeared no more than twice in a row and the position of items in a pair was counterbalanced across participants. There were 4 different word rating questionnaires. Following the format used in previous Pathfinder research (Manguno-Mire & Geer, 1998), participants were asked to rate the similarity of each word pair on a 7 point scale (1= highly similar to 7= highly dissimilar). Participants were asked to form “first impression” accounts of the word pairs and not to change ratings once entered on the questionnaire. Responses to the word rating questionnaire were subsequently entered into the Pathfinder algorithm for analysis and the Knowledge Network Organizing Tool (Schvaneveldt, 1990) for generation of a cognitive network. An example of the word rating questionnaire can be found in Appendix D.

Demographic Questionnaire/Sexual-Preoccupation Subscale of the Sexuality Scale. This questionnaire asked participants information regarding age, race, year in college, native language, age of first sexual experience (intercourse), frequency of infidelity, sexual orientation, and number of sexual partners since the age of 14. Also included on this page was a measure of sexual preoccupation.

The sexual-preoccupation subscale of the Sexuality Scale (Snell and Papini, 1989) was used to assess the degree of preoccupation with sex evidenced by participants in this study. Sexual-preoccupation is defined as a “tendency to become so absorbed in, obsessed with, and engrossed in sexual cognitions and behaviors” that other thoughts are excluded (Snell & Papini, 1989, p.257). Sexual preoccupation may be relevant to sexual aggression in that it comprises part of the sexual promiscuity/impersonal sex pathway postulated to serve as a risk factor for the expression of sexual aggression (Dean and Malamuth, 1997; Malamuth et al., 1991; 1993). Snell and Papini devised the 30-item Sexuality Scale as a measure of sexual-esteem, sexual-depression and sexual-preoccupation. Snell and Papini validated this measure using undergraduate males and females. Preliminary evidence from three studies indicated that the Sexuality Scale was a reliable and valid measure of these constructs (Snell, Fisher, & Schuch, 1992; Snell & Papini, 1989). Original Cronbach alpha coefficients for the sexual-preoccupation subscale ranged from .87 to .91, test-retest (one month) correlations ranged from .70 to .76 and adequate discriminant and convergent validity was obtained (Snell, Fisher, & Schuch, 1992). Recent confirmatory factor analysis indicated that a short form of the scale provided a better fit between items and factors (Wiederman & Allgeier, 1993). This 15-item version of the Sexuality Scale is highly reliable and highly correlated with the original longer version. The calculated reliability for the sexual-preoccupation subscale for males was .96 (Wiederman & Allgeier, 1993). The five items comprising the sexual-preoccupation subscale

of the short form of the Sexuality Scale were used for the present study.

Participants were asked to indicate agreement with the following statements on a scale of 0 to 5 (0= "strongly disagree" and 5= "strongly agree"): "I think about sex all the time", "I think about sex more than anything else", "I tend to be preoccupied with sex", "I am constantly thinking about having sex", and "I think about sex a great deal of the time". Responses were summed and transformed into a z score.

The sexual promiscuity/preoccupation index was generated by summing the z scores generated from participants' responses to questions regarding age of first intercourse, number of sexual partners since the age of 14, frequency of infidelity, and sexual preoccupation to obtain a composite score. Calhoun, Bernat, Clum, and Frame (1997) used a similar scoring procedure to obtain a composite representing sexual promiscuity, although, their composite included only age of first intercourse and number of sexual partners since the age of 14. A copy of this questionnaire can be found in Appendix E.

Hypermasculinity Inventory. The Hypermasculinity Inventory is a measure of three aspects of macho personality: "calloused sex attitudes toward women, a conception of violence as manly, and a view of danger as exciting" (Mosher & Sirkin, 1984, p. 151). Mosher and Sirkin indicate that the inventory has been demonstrated to have adequate convergent and discriminant validity and reliability with an overall Cronbach α of .89 and alphas ranging from .71 to .79 for three subscales comprising the scale. The 30-item inventory is arranged in a forced-choice format and can be found in Appendix F (Macho alternatives

for each item are indicated in italics). A total score is obtained by summing the number of macho alternatives a participant selects (Mosher, 1998).

Date Rape Discrimination Task. The Date Rape Discrimination Task (Marx & Gross, 1995) is an analogue measure of sexual aggression and involves recording the length of time participants wait to indicate that a man in an audiotaped interaction should cease making sexual advances (decision latency). The audiotope portrays two college students engaged in sexual activity following a date. The intimacy portrayed on the tape progresses from kissing to genital stimulation to intercourse. The woman on the tape attempts to resist sexual contact through the use of verbal appeal, verbal demands, and later, shouting and crying. The tape is approximately 6½ minutes in length.

Evidence for the construct validity and test-retest reliability of the measure has been provided by Bernat, Stolp, Calhoun, & Adams (1997). Test-retest reliability was reported as $r(15) = .87$ $p < .0001$ for a two week period. As related to convergent validity, significant positive correlations were obtained between decision-latency times and frequency of sexually aggressive behavior, calloused sexual beliefs, acceptance of interpersonal violence, and sexual promiscuity. Discriminant validity was demonstrated by the lack of significant correlation between decision-latency and social desirability, alcohol consumption or drug use. Further evidence of the convergent (correlation with rape attitudes and beliefs) and discriminant validity (nonsignificant correlation with a measure of social desirability) of the Date Rape Discrimination Task was provided by Sloan and Gross (1998).

Procedures

Participants were asked to complete an informed consent form (Appendix G) which indicated that participation in this study involved exposure to sexual material. Following signature of the informed consent, participants were given written instructions regarding the Date Rape Discrimination Task. The content of the instructions given was taken from previous research utilizing this measure (Bernat, Stolp, Calhoun, & Adams, 1997). Participants were instructed that they would be listening to an audiotape of a sexual encounter between two college students who had just returned to the man's apartment following a date. Participants were told that this was the couple's third date and that following previous dates they had also returned to the man's apartment and engaged in some sexual contact. Further instructions were:

You are now to listen to the couple while they are on their next date. They have just returned from the movies. They have now returned to the man's apartment. Your task is to listen to the tape, and signal, by pressing the button in front of you, *if and when*, the man should refrain from making further sexual advances. Regardless of whether you decide to press the button or not, you will continue to listen to the entire interaction until the tape is finished.
(Bernat, Stolp, Calhoun, & Adams, 1997)

After confirmation of understanding of the instructions provided, the examiner instructed the participant to open the door of the room when the task was completed. The examiner then simultaneously started the audiotape and the computer counter program and left the room. In order to assure the synchronization of the audiotape and the computer timer, a special dual-button device was constructed such that the tape and timer were started by the press of one button. In order to offset the effect of curiosity, participants listened to

the entire tape regardless of when they indicated the man on the tape should stop his advances. All participants listened to the audiotape individually. After listening to the audiotape, the participant was instructed to proceed to another room to complete questionnaire measures. Participants were provided with a subject number upon completion of listening to the audiotape. The participant was instructed to provide the second examiner with the number so that the correct questionnaire packet could be given to them. That is, the subject number on the questionnaire packet matched the subject number used for the audiotape session. This was to ensure that data from participants found not to meet selection criteria could be appropriately eliminated from analyses.

Participants completed questionnaires in groups not exceeding 5. The size of the group was intentionally kept small such that ample space between participants could be provided in the room utilized for data collection. Due to the extremely sensitive nature of the information requested from participants, it was felt that a group format would provide a degree of anonymity that might decrease participants' reluctance to answer honestly. However, too large a group might create seating arrangements that did not provide adequate privacy in responding to questionnaires.

Participants were asked to complete questionnaire packets in the order provided. Bohner et al. (1998) conducted two studies which varied the presentation order of scales assessing rape myth beliefs and rape proclivity. Bohner et al. found a higher correlation between scores on the belief measure and rape proclivity measures when the belief measure was presented first

rather than second. Bohner et al. concluded that belief in rape myths affects men's self-reported proclivity to rape. While this conclusion seems presumptuous, the results from the study do indicate that exposure to attitude assessment inventories may affect responses to behavioral inventories. Taking this finding into account, the questionnaires in this study were presented in two orders. The first order was: Word Rating, HMI, CTS2, ASA, SES, and Demographic Questionnaire. As arranged, each behavioral measure (CTS2, SES) was preceded by an attitude measure (HMI, ASA). The second order was: Word Rating, CTS2, HMI, SES, ASA, and Demographic Questionnaire. In this second order, each behavioral measure preceded an attitude measure. The orders were counterbalanced across participant groups. For both orders, the two measures of past sexual aggression did not occur consecutively in order to decrease the likelihood that participants would notice they had been asked the same questions twice. Participants were specifically instructed not to skip questionnaires or look ahead in the booklet provided. All questionnaire booklets were contained in individual envelopes and participants were instructed to return completed questionnaires in the envelope provided with the envelope sealed. This provision was used to decrease participants' anxiety regarding the potential that the examiner present in the room would be able to view their responses once the booklet was turned in. To further decrease participants' potential anxiety regarding revealing sexual information and to eliminate the potential confounding effect of the presence of a female, all

examiners were male. No master list of participants' identification codes was kept thereby ensuring that in no way were participants able to be identified.

Upon return of the envelope containing the questionnaire booklet, participants were presented with a debriefing form and a packet of information regarding rape (see Appendix H). The content of the debriefing form was taken from Malamuth and Check's (1984) study in which effective debriefing following exposure to pornographic rape portrayals significantly decreased participants' beliefs in rape myths. Participants were required to read the debriefing form while listening to an audiotaped version read by a female via headphones prior to leaving the room. The examiner presented the participant with an extra credit slip once the debriefing form had been read by the participant. Due to the sensitive nature of the material addressed in this study, proper debriefing was essential. Previous experience has been that participants frequently do not fully attend to debriefing information provided, therefore this added measure of control appeared necessary.

Results

All data analysis for this study was conducted using the Statistical Program for the Social Sciences (SPSS) version 8.0. Missing data are reflected in the degrees of freedom for each analysis.

Pathfinder Analysis Overview

In order to generate network information, similarity ratings made by participants for all word pairs were entered into the PCKNOT program for Pathfinder analysis. Pathfinder parameters were set at $r = \infty$ necessitating only an ordinal level of rating and $q = n - 1$ in order to generate the simplest network solution for each participant. Information regarding network similarity, number of links, and link weights was obtained from Pathfinder analysis. A Pathfinder network (PFNET) was produced for each participant as well as an average network for each sexual aggression group.

Pathfinder provides a measure of coherence of a data set determined by calculating the correlations between individual items and all other items in a set.

Coherence reflects the consistency of the data in a particular set. Low coherence (scores of $< .20$) can be indicative of limited expertise or may indicate participants did not take the rating task seriously (Schvaneveldt, 1990).

Eleven participants were eliminated from all Pathfinder analyses due to low coherence. Four participants were from group a, 4 were from group b, and 3 were from group d. The resulting number of participants for group a was 77, for group b was 107, and group d was 85.

Network Complexity

The utility of Pathfinder is its ability to condense a large amount of complex data into a meaningful network. To begin analysis of the data gathered in this study, the complexity of generated networks was compared as a function of group membership by examining differences in the total number of links contained in individual networks. No predictions were made regarding network complexity therefore this was an exploratory post-hoc analysis. A one-way analysis of variance (ANOVA) was conducted to evaluate the relationship between group membership and the total number of links in a network. The independent variable, group, included three levels: past history of and a future likelihood of engaging in sexual aggression/coercion (group a), past history of sexual aggression/coercion but no future likelihood of engaging in sexual aggression (group b), and no past history of or future likelihood of engaging in sexual aggression (group d). The dependent variable was the total number of links contained in each individual's network. The ANOVA was not significant, $F(2, 266) = .507, p > .05$ indicating no significant differences in total number of links by group. Table 2 presents the means and standard deviations of the total links by group.

To further explore the overall complexity of networks, an average network was generated for each sexual aggression group. Figures 1, 2, and 3 present an average network for each of the three sexual aggression groups (a, b, and d, respectively). Please note the position of words was chosen for ease

Table 2

Mean Total Links By Group

Group	Total Links
a	38.36 (9.42)
b	38.22 (11.89)
d	39.76 (11.94)

Note. Means are shown with standard deviations in parentheses

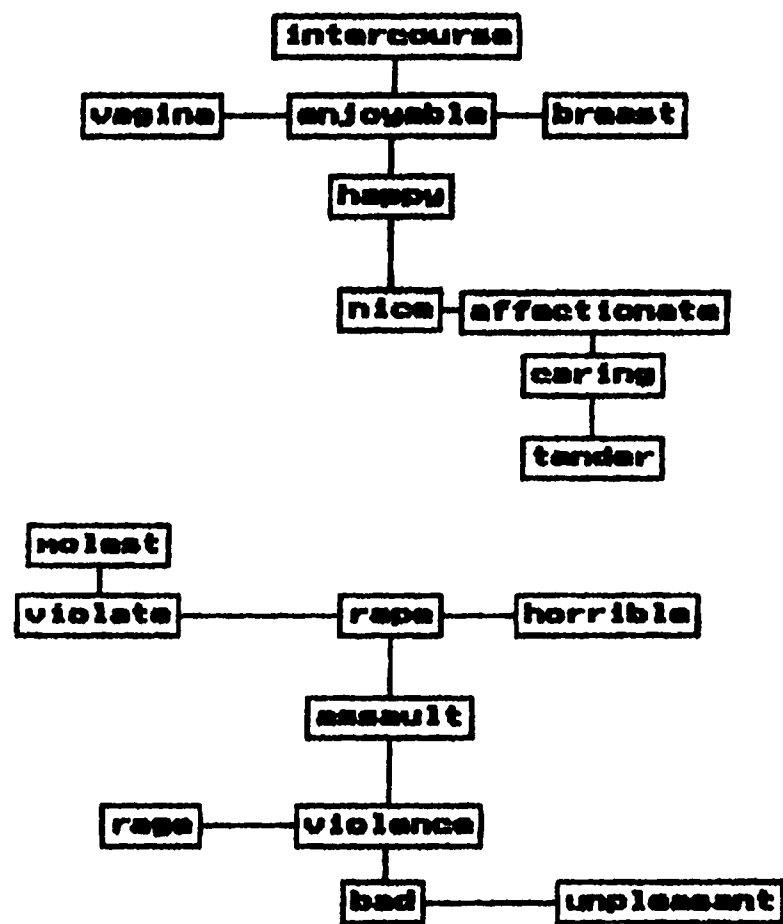


Figure 1. Average Network of Participants in Group a

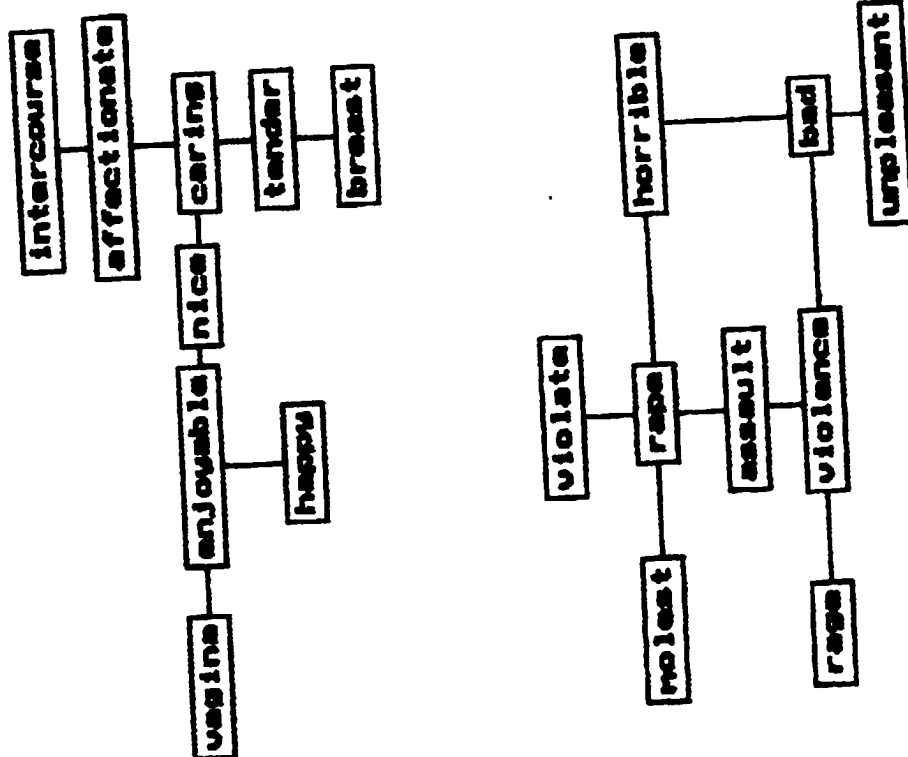


Figure 2. Average Network of Participants in Group b

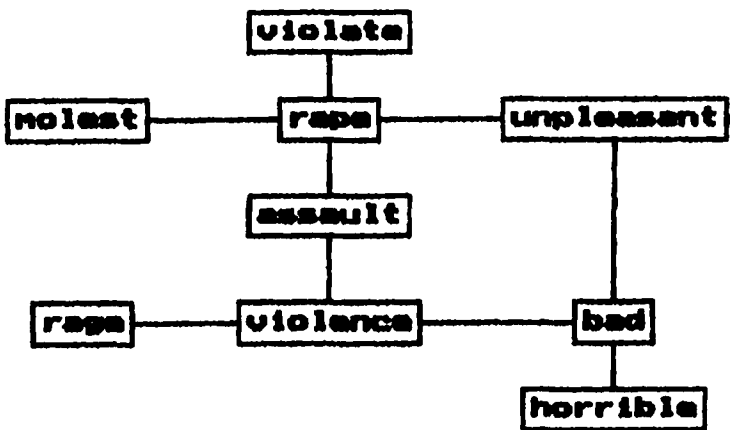
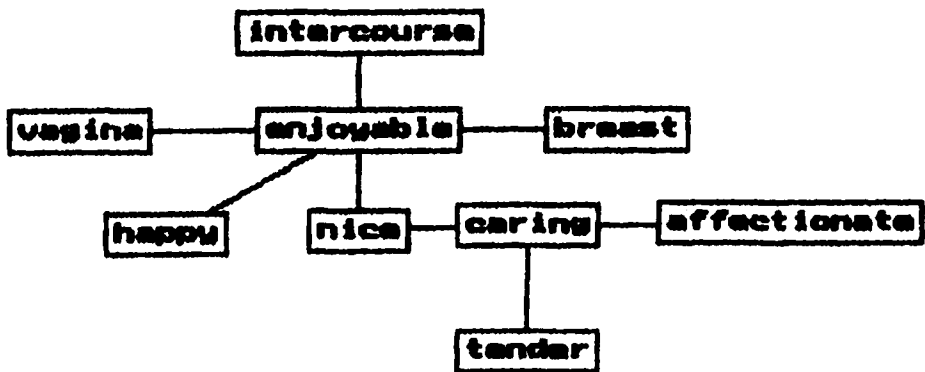


Figure 3. Average Network of Participants in Group d

of presentation and does not reflect differences in link strength or direction, however, what can be seen from the networks is a striking similarity between groups in the organization of sexual and aggressive information. At this simplistic level of analysis there appear to be few differences in the networks generated by participants admitting a likelihood of engaging in sexual aggression/coercion and/or a past history of engaging in sexual aggression and those admitting no history or future likelihood of sexual aggression.

Network Similarity

As stated previously, Pathfinder assesses the similarity of comparison networks by computing a ratio of links in common to unique links. Similarity scores can range in value from 0 to 1. To explore hypothesis 1 and hypothesis 2, similarity scores were generated by comparing each participant's network with every other participant's network. Mean and median similarity scores for participants within and between sexual aggression groups (a, b, and d) were computed. Comparisons of similarity scores between groups a, b, and d were made. The mean and median similarity scores between and within groups can be found in Table 3.

Due to the fact that the distribution of similarity scores is unknown, hypothesized differences in similarity scores were compared using a nonparametric Kruskal-Wallis test. Comparison of the within and between group similarity scores was not statistically significant [χ^2 (5, N = 807) = 8.47, p > .05]. This indicated that similarity scores did not differ whether similarity scores were compared between or within sexual aggression groups. Contrary

Table 3

Mean and Median Similarity Scores

Group	Mean	Median
a	.350 (.10)	.348
b	.362 (.11)	.352
d	.370 (.12)	.359
a and b	.350 (.11)	.345
a and d	.348 (.11)	.341
b and d	.364 (.12)	.353

Note. Means are shown with standard deviations in parentheses

to both hypothesis 1 and 2, and as can be seen from examination of Table 3, all groups have comparable similarity scores. Further comparison was made of within group similarity score as a function of group membership. This comparison was not statistically significant [$X^2 (2, N= 269) = 2.66, p > .05$] indicating, contrary to hypothesis 2, similarity scores did not vary as a function of group membership. The proportion of variability in similarity scores accounted for by group membership was .01 indicating a weak relationship between similarity of networks and sexual aggression group.

Links Within Word Categories

Hypothesis 3 predicted an interaction of sexual aggression group membership and word category for the number of links within the sexual aggression word category. To test hypothesis 3 a 3X6 general linear model (GLM) repeated measures ANOVA was conducted. The three level independent variable was sexual aggression group (a, b, or d) and the 6 level repeated measures independent variable was word category. The dependent variable was the number of links each individual had for words within a category. The Group X Word Category interaction was not significant, [$F (10, 524) = .676, p > .05$] indicating, contrary to hypothesis 3, links within word categories did not vary as a function of group membership. The word category main effect was significant, [$F (5, 262) = 67.95, p < .001$] indicating that collapsing across sexual aggression groups, the number of links within word categories systematically varied by type of word category. No other main effects or interactions were significant. Means and standard deviations for the

number of links within word categories by group are presented in Table 4.

Pairwise comparisons were conducted to follow-up the significant main effect of word category. Familywise error rate (.05) was controlled for across these tests using Holm's sequential Bonferroni approach. Significant differences in the number of links within word categories were obtained when comparing the sex word category and all other categories with the sex word category yielding the least number of links overall. The aggression word category ($M = 1.98$, $SD = .87$) had significantly fewer links than the positive ($M = 2.37$, $SD = .79$) and relationship ($M = 2.24$, $SD = .86$) word categories. The sexual aggression word category ($M = 2.07$, $SD = .92$) had significantly fewer links than the positive word category ($M = 2.37$, $SD = .79$) but significantly more links than the negative word category ($M = 1.81$, $SD = .95$). The positive word category ($M = 2.37$, $SD = .79$) and the relationship word category ($M = 2.24$, $SD = .86$) had significantly more links than the negative word category ($M = 1.81$, $SD = .95$). Table 5 presents the significant pairwise comparisons for the word categories.

Links on Individual Words

According to hypothesis 4, members of groups a and b were expected to have more links on sexual aggression words relative to all other words and members of group d were expected to have the least number of links on sexual aggression words as compared to other words. To examine group differences

Table 4

Mean Number of Links Within Word Categories

Word Category	Group			Total
	a	b	d	
Sexual	1.22 (.87)	1.20 (.83)	1.24 (.87)	1.22 (.85)
Aggression	1.92 (.87)	1.93 (.87)	2.09 (.85)	1.98 (.87)
Sexual Aggression	1.91 (.96)	2.13 (.87)	2.14 (.93)	2.07 (.92)
Positive	2.36 (.84)	2.33 (.84)	2.42 (.68)	2.37 (.79)
Negative	1.71 (.90)	1.73 (1.02)	1.99 (.87)	1.81 (.95)
Relationship	2.27 (.85)	2.19 (.84)	2.27 (.90)	2.24 (.86)

Note. Means are shown with standard deviations in parentheses

Table 5

Significant Pairwise Comparisons for Pairs of Word Categories

Word Category Pair	t(268)
Sexual and Aggression	-10.74*
Sexual and Sexual Aggression	-12.21*
Sexual and Positive	-17.01*
Sexual and Negative	- 8.26*
Sexual and Relationship	-14.08*
Aggression and Positive	- 5.49*
Aggression and Relationship	- 3.57**
Sexual Aggression and Positive	- 4.27*
Sexual Aggression and Negative	3.84**
Positive and Negative	8.35*
Negative and Relationship	- 5.85*

Note. * $p < .001$

** $p < .01$

on individual words a 3X18 GLM repeated measures ANOVA was conducted. The three level independent variable was sexual aggression group (a, b, or d) and the 18 level repeated measures independent variable was words. The dependent variable was the number of links each individual had on each word. There was a significant main effect of words, [$F(17, 249) = 35.17, p < .001$] as well as a significant Group X Words interaction effect, [$F(34, 498) = 1.67, p = .01$]. The main effect of group was not significant, [$F(2, 265) = .512, p > .05$]. These analyses justified the use of univariate ANOVAS for the individual words and a conservative p value (.02) was used to determine significance in accordance with research previously conducted in this laboratory. Two words ("breast" and "vagina") yielded a group effect. Table 6 presents the 18 words, the mean number of links, means by group, the associated univariate F values, and significance levels. Tukey Post-Hoc analyses indicated participants in group a (past history of sexually aggressive behavior and a future likelihood of engaging in sexually aggressive behavior) had significantly more links on the word "breast" than did members of group b ($p = .002$) or group d ($p = .02$) and significantly more links on the word "vagina" than group b ($p = .02$). As a reminder, members of group b indicated a past history of sexually aggressive/coercive behavior but no future likelihood of engaging in sexually aggressive behavior and members of group d indicated no past history of sexually aggressive behavior or likelihood of engaging in sexually aggressive behavior.

Table 6**Mean Links on Individual Words**

Word	All Subjects	Group			F(2,266)	
		a	b	d		
affectionate	4.11	4.47	3.88	4.06	3.18	p > .02
assault	4.74	4.23	4.83	5.09	3.25	p > .02
bad	5.03	4.87	4.82	5.44	2.62	p > .05
breast	3.35	4.01	3.02	3.15	6.12	p < .003*
caring	4.03	4.01	4.04	4.04	.006	p > .05
enjoy	4.61	4.75	4.62	4.47	.473	p > .05
happy	3.91	4.10	3.88	3.76	.739	p > .05
horrible	4.59	4.14	4.60	4.99	3.32	p > .02
intercourse	3.83	3.86	3.83	3.80	.017	p > .05
molest	4.67	4.34	4.78	4.82	1.25	p > .05
nice	4.37	4.62	4.17	4.40	1.51	p > .05
rage	3.80	3.60	3.83	3.95	.630	p > .05
rape	5.87	5.75	5.71	6.16	1.28	p > .05
tender	4.09	4.23	4.06	3.99	.333	p > .05
unpleasant	3.90	3.65	3.86	4.18	1.50	p > .05

(Table 6 continued)

vagina	3.26	3.70	2.89	3.33	3.68	p = .02*
violate	4.58	4.10	4.73	4.82	3.09	p = .05
violence	4.78	4.31	4.89	5.08	3.39	p > .02

Note. * Significant Group Differences

Pairwise comparisons were conducted to explore the significant main effect of words. However, since comparison of all words was not deemed relevant to hypotheses regarding sexual aggression, only the sexual aggression words were of interest. Examination of the overall mean number of links for sexual aggression words (molest, rape, violate) seemed to indicate "rape" had the highest number of links of all words across all participants. Table 7 presents the results of pairwise comparisons between "rape" and the other 17 words used in this study. Familywise error rate (.05) was controlled for across these tests using Holm's sequential Bonferroni approach. As expected from examination of the means, participants produced significantly more links to the word "rape" than any other words. From this it can be concluded that for this sample of participants, "rape" is central to the concept of sexual aggression.

Links Between Word Categories

Relatedness between categories can be examined by evaluating the number of links occurring between categories and provides further information regarding network structure. Three hypotheses were made regarding links between word categories. Hypothesis 5 predicted that members of groups a and b (future likelihood of sexually aggressive behavior and/or a past history of sexually aggressive behavior) would have more links between the sexual and aggression word categories and the sexual and sexual aggression word categories than group d (no history of sexual aggression or likelihood of

Table 7

Significant Pairwise Comparisons Between "Rape" and All Other Words

Comparison Word	t(268)	p < .001
Affectionate	-12.37	
Assault	- 8.80	
Bad	- 6.11	
Breast	-15.88	
Caring	-13.19	
Enjoyable	- 8.37	
Happy	-13.36	
Horrible	-10.50	
Intercourse	-14.21	
Molest	- 9.52	
Nice	-10.33	
Rage	-15.72	
Tender	-11.36	
Unpleasant	-15.37	
Vagina	-17.29	
Violate	-10.76	
Violence	- 8.78	

engaging in sexual aggression). Hypothesis 7 predicted group d would produce more links between the aggression and sexual aggression word categories and the negative word category than groups a or b. Hypothesis 6 predicted that members of groups a and b were more likely to link the sexual aggression and aggression word categories to the positive word category than to the negative word category while the opposite was predicted for members of group d (more links to negative word category). Links between word categories was examined using a 3x15 GLM repeated measures ANOVA. The three level independent variable was sexual aggression group. The 15 level repeated measures independent variable was word category pairs. The dependent variable was the number of links between the 15 word category pairs for each individual. There was a significant main effect of word category pairs, [$F(14, 251) = 132.89, p < .001$] as well as a significant Group X Word Category Pairs interaction effect, [$F(28, 502) = 1.94, p = .003$]. The main effect of group was not significant, [$F(2, 264) = .175, p > .05$]. These analyses justified the use of univariate ANOVAS for the individual word categories. Table 8 presents the significant group differences derived from the univariate ANOVAs. Post-hoc analyses to pinpoint group differences were conducted using the Dunnett's C method due to violation of the assumption of equal variances. According to this multiple comparison test, group a had significantly more links between the sexual word category and the positive word category ($p < .05$) and significantly less links between the aggression word category and the sexual aggression

Table 8

Significant Between Word Category Group Differences and Mean Number of Links

Word Category Pair	Group			F(2,266)	
	a	b	d		
Sexual/ Positive	4.17	3.40	3.16	3.34	p < .05
Aggression/ Sexual Aggression	4.01	4.80	4.80	3.37	p < .05
Aggression/ Negative	3.75	4.39	4.80	3.53	p < .05

word category ($p < .05$) than groups b and d. Group a also had less links between the aggression word category and the negative word category ($p < .05$) than groups b and d. No other comparisons were significant. In summary, the hypothesized group differences in links between the aggression and sexual aggression word categories were not obtained. In partial support of hypothesis 7, group d produced significantly more links than group a between the aggression and negative word categories but no significant group differences were obtained in the number of links between the sexual aggression and negative word categories.

Pairwise comparisons were conducted to explore the significant main effect of word category pairs. Of specific interest were differences in the number of links between the sexual aggression and positively valenced word categories as compared to the sexual aggression and negatively valenced word categories and between the aggression and positively valenced word categories as compared to the aggression and negatively valenced word categories. This analysis was conducted for each sexual aggression group separately since predictions were made regarding each group (hypothesis 6). Results of the analyses indicated all groups had more links between the aggression and sexual aggression word categories and the negative word category than links with the positive word category. These results only partially support hypothesis 6 in that group d was predicted to display this pattern while groups a and b were predicted to show the opposite pattern (more links to the positive word category). Table 9 presents the pairwise comparisons by group

Table 9

**Pairwise Comparisons for Pairs of Between Word Categories by Group-
Number of Links**

Aggression and Positive versus Aggression and Negative

Group	Statistical Test *
Group a	$t(76) = -13.27$
Group b	$t(106) = -17.16$
Group d	$t(84) = -17.13$

Sexual Aggression and Positive versus Sexual Aggression and Negative

Group	Statistical Test
Group a	$t(76) = -18.88$
Group b	$t(105) = -19.81$
Group d	$t(84) = -20.36$

Note. * All differences significant at the $p < .001$ level

for the number of links between the sexual aggression and positive word categories as compared to the sexual aggression and negative word categories, as well as for the aggression and positive word categories as compared to the aggression and negative word categories. Table 10 presents the means and standard deviations for word category pairs by group.

Analysis of Link Weights

Hypothesis 8 predicted that participants admitting a likelihood of engaging in sexually aggressive behavior and/or a past history of engaging in sexually aggressive behavior (groups a and b) would have stronger links (higher link weight) between the sexual and aggression word categories and the sexual and sexual aggression word categories than group d (no history of sexual aggression/coercion or likelihood of engaging in future aggression). Hypothesis 9 predicted that members of groups a and b would produce stronger links between the sexual aggression and aggression word categories to the positive word category than to the negative word category while the opposite was predicted for members of group d (stronger links to negative word category). In addition, hypothesis 10 predicted group d would have stronger links than groups a and b between the sexual aggression and aggression word categories and the negative word category. Due to the ordinal nature of link weight data, examination of these hypotheses was conducted using the nonparametric Kruskal-Wallis test. The Kruskal-Wallis compared the link weights by group for links connecting all possible combinations of the six word categories. Significant group differences were obtained for links between the

Table 10

Mean Number of Links for Word Category Pairs by Group

Word Category Pair	Group		
	a	b	d
Aggression/ Positive	.01 (.11)	.09 (.51)	.01 (.11)
Aggression/ Negative	3.75 (2.45)	4.43 (2.49)	4.80 (2.59)
Sexual Aggression/ Positive	.10 (.38)	.09 (.51)	.12 (.50)
Sexual Aggression/ Negative	5.05 (2.26)	4.88 (2.41)	5.32 (2.27)

Note. Means are shown with standard deviations in parentheses

sexual and positive word categories [$X^2 (2, N = 269) = 8.15, p = .02$] and the sexual and relationship word categories [$X^2 (2, N = 269) = 7.57, p = .02$]. No other comparisons were significant. Follow-up tests were conducted to evaluate pairwise differences among the three groups using the nonparametric Mann-Whitney U test. The results of these tests indicated a significant difference between group a and groups b and d. Group a had significantly stronger links ($p = .01$) between the sexual and positive word categories ($M = 6.69, SD = 4.11$) than group b ($M = 5.39, SD = 4.96$) and group d ($M = 5.02, SD = 3.72$). Group a also had significantly ($p = .009$) stronger links ($M = 5.81, SD = 3.61$) than group b ($M = 4.64, SD = 4.46$) and group d ($M = 4.61, SD = 3.35, p < .05$) between the sexual and relationship word categories. Link weights did not significantly differ when comparing group b to group d. Table 11 presents the means and standard deviations of the link weights for word category pairs by group.

Differences in link weights between the sexual word category and the positive word category versus the negative word category and between the aggression word category and the positive word category versus the negative word category were examined using the Wilcoxon signed-rank test.

Comparisons were made for each group separately. The results indicated all groups had significantly stronger links between the sexual aggression and aggression word categories and the negative word category than the positive word category. Table 12 presents the results of the Wilcoxon tests for the categories of interest.

Table 11**Mean Link Weights for Word Category Pairs by Group**

Word Category Pair	Group		
	a	b	d
Sexual/ Aggression	.73 (2.46)	.56 (1.83)	.72 (1.86)
Sexual/ Sexual Aggression	3.09 (3.31)	2.41 (3.31)	2.82 (2.85)
Sexual/ Positive	6.69 (4.11)	5.39 (4.96)	5.02 (3.72)
Sexual/ Negative	.39 (1.51)	.57 (1.81)	.65 (3.33)
Sexual/ Relationship	5.81 (3.61)	4.64 (4.46)	4.61 (3.35)
Aggression/ Sexual Aggression	5.29 (2.75)	6.31 (3.39)	5.87 (3.31)
Aggression/ Positive	.09 (.57)	.11 (.59)	.02 (.22)
Aggression/ Negative	4.91 (3.22)	6.10 (3.83)	6.09 (3.96)
Aggression/ Relationship	.44 (1.35)	.32 (2.04)	.08 (.41)
Sexual Aggression/ Positive	.21 (.78)	.25 (1.43)	.21 (1.07)
Sexual Aggression/ Negative	6.51 (3.20)	6.31 (3.45)	6.42 (3.24)
Sexual Aggression/ Relationship	.30 (.97)	.53 (1.90)	.14 (.73)
Positive/ Negative	.27 (.93)	.07 (.34)	.24 (.80)
Positive/ Relationship	6.01 (3.98)	6.53 (3.80)	5.47 (3.09)
Negative/ Relationship	.51 (1.33)	.37 (1.78)	.22 (.75)

Table 12

Pairwise Comparisons for Pairs of Between Word Categories by Group-Link Weights

Aggression and Positive versus Aggression and Negative

Group	Statistical Test *
Group a (n = 77)	$z = -7.20$
Group b (n = 107)	$z = -8.82$
Group d (n = 85)	$z = -7.87$

Sexual Aggression and Positive versus Sexual Aggression and Negative

Group	Statistical Test
Group a (n = 77)	$z = -7.44$
Group b (n = 107)	$z = -8.59$
Group d (n = 85)	$z = -7.83$

Note. * All differences significant at the $p < .001$ level

Analysis of Hypermasculinity and Sexual Promiscuity/Preoccupation

Hypothesis 11 predicted higher levels of promiscuity/preoccupation and hypermasculinity for those participants admitting a future likelihood of and/or a past history of engaging in sexual aggression (groups a and b) than for those admitting no history of or future likelihood of sexual aggression (group d). This hypothesis was explored using a GLM multivariate analysis of variance (MANOVA). Group membership was the three level independent variable while hypermasculinity index (HMI) and sexual promiscuity/preoccupation index scores were the dependent variables. Recall that the sexual promiscuity/preoccupation index is a composite z score of number of sexual partners, frequency of infidelity, age of first sexual intercourse, and sexual preoccupation. A MANOVA was chosen as opposed to separate one-way ANOVAs as the Pearson product-moment correlation between HMI scores and the sexual promiscuity/preoccupation index was found to be .25 ($p = .01$). Significant differences were found among the three sexual aggression groups on the dependent measures, Wilks' Lambda, $F(4, 530) = 9.12, p < .001$. ANOVAs on each dependent variable were conducted as follow-up tests to the MANOVA. The ANOVA for the HMI scores was significant, $F(2, 266) = 17.05, p < .001$, as well as the ANOVA for the promiscuity/preoccupation index scores, $F(2, 266) = 5.00, p = .007$. A Tukey post-hoc analysis of the univariate ANOVA for HMI scores indicated group a ($M = 12.88, SD = 5.86$) had a higher HMI score than group b ($M = 10.38, SD = 5.16$) and group d ($M = 8.09, SD = 4.62$). All differences were significant at the $p < .004$ level. In addition, group b had a

higher mean HMI score than group d ($p = .007$). These differences were as predicted by hypothesis 11. A Tukey post-hoc analysis of the univariate ANOVA for promiscuity/preoccupation index scores indicated group a ($M = .521$, $SD = 2.71$) had a significantly ($p = .007$) higher mean sexual promiscuity/preoccupation index than group d ($M = -.656$, $SD = 2.04$). The comparison of group d to group b ($M = .171$, $SD = 2.58$) approached significance ($p = .054$). The mean sexual promiscuity/preoccupation index score of group a was not significantly different ($p > .05$) from that of group b. These findings are in partial support of hypothesis 11.

Differences In Performance on the Date Rape Discrimination Task

Differences in decision latency times to the Date Rape Discrimination Task as a function of group membership were analyzed using a one-way ANOVA. The three level independent variable was group and the dependent variable was decision latency time recorded in seconds. Of note, 10 participants were excluded from analysis due to timing equipment malfunction during the discrimination task. Four participants were from group a, four were from group b, and two were from group d. The ANOVA was significant, $F(2, 256) = 14.02$, $p < .001$. Follow-up tests were conducted using the Dunnett's C test due to violation of the homogeneity of variance assumption. The results of these tests, as well as the means and standard deviations for the three sexual aggression groups are presented in Table 13. In partial support of hypothesis 12, there were significant differences in the means between groups in that

Table 13

Mean Decision Latency Times and Significant Group Differences

Group Decision Latency Time (sec)		Group		
		a	b	d
a	203.26 (69.42)		*	*
b	166.70 (55.88)			NS
d	152.65 (60.02)			

Note. NS = nonsignificance, while * indicates significance using the Dunnett's C test

group a had longer mean decision latency times than groups b and d. Group b times were not significantly different from group d times.

Predicting Performance on the Date Rape Discrimination Task

Hypothesis 12 predicted that indices of network organization (links between sexual and aggression, sexual and sexual aggression, and sexual aggression and positive words) would be significant predictors of decision latency times for the Date Rape Discrimination Task (Marx and Gross, 1995). The overall aim was to explore whether information regarding associative networks could provide information beyond that of the confluence model regarding that prediction of sexually aggressive behavior. A multiple regression analysis was conducted to evaluate how well network organization, sexual promiscuity/preoccupation, attraction to sexual aggression, hypermasculinity, and a past history of sexual aggression predicted decision latency times. The predictors were HMI scores, links between sexual and aggression, sexual and sexual aggression, and sexual aggression and positive words, promiscuity/preoccupation index scores, and scores ≥ 1 on: 1) the ASA scale (last 4 items), 2) the CTS2 (items b-g), and 3) the SES (items 2,3, and 5-10). The criterion variable was decision latency time. A cross validation procedure was employed to generate the regression equation. That is, responses from one half the participants in each sexual aggression group were randomly chosen for use in generating the regression equation ($N = 131$). The method of variable entry was stepwise. The linear combination of ASA scale scores and HMI scores was significantly related to decision latency time, $F(2, 128) = 14.51$,

$p < .001$. The sample multiple correlation coefficient was .43, indicating approximately 18% of the variance of the decision latency times in the sample can be accounted for by the linear combination of ASA scale scores and HMI scores. The bivariate correlations between ASA scale scores and HMI scores and the criterion variable were .37 and .33 ($p < .001$), respectively. The partial correlations between ASA scale scores and HMI scores and the criterion variable were .29 ($p = .001$) and .23 ($p = .009$), respectively. The regression equation generated from this analysis was: $17.66 \text{ ASA} + 2.57 \text{ HMI} + 135.68$ (standardized equation: $.291z \text{ ASA} + .225 z \text{ HMI}$). As can be seen from the final equation, none of the hypothesized Pathfinder variables entered the equation as significant predictors of decision latency time.

Following generation of the regression equation, validation of the equation was pursued. Responses from one half the participants in each sexual aggression group not chosen for the generation of the regression equation were chosen for use in the validation procedure ($N = 128$). Using the regression equation, decision latency times were predicted for each participant using scores on the HMI and ASA scale. Predicted decision latency times and actual decision latency times were evaluated by conducting a second regression analysis. In this analysis the predictor variable was the predicted decision latency time and the criterion variable was the actual decision latency time. Predicted and actual decision latency times were significantly related, $R^2 = .08$, $F(1, 125) = 11.14$, $p = .001$. To further explore the relationship between predicted and actual decision latency times a paired samples t-test was

conducted. No significant difference between predicted ($\underline{M} = 171.54$, $\underline{SD} = 24.38$) and actual ($\underline{M} = 171.43$, $\underline{SD} = 63.86$) decision latency times was obtained, $t(126) = -.019$, $p = .99$. The mean difference in decision latency times was $-.11$. From this analysis it can be concluded that predicted decision latency times obtained from the regression equation were not significantly different from the actual times obtained from data collection. In conclusion, the regression equation comprised of HMI and ASA scores is a valid predictor of participant responses to the decision latency task.

Discussion

One purpose of the present study was to examine sexual aggression using methodology from within the realm of cognitive psychology. Of specific interest was detecting differences in the organization of cognitive networks of individuals admitting a past history of sexual aggression/coercion and a likelihood of engaging in future sexual aggression as compared to those individuals not admitting such a history or likelihood. Using the Pathfinder methodology (Schvaneveldt, 1990) to generate knowledge networks, sample differences in the organization of sexual and aggressive information were identified. Many of the differences were contrary to a priori predictions made using the logic of network theory.

First consider the analysis of network similarity scores. Contrary to hypotheses one and two, all three sexual aggression groups had comparable similarity scores and similarity scores did not differ whether comparisons were made between or within groups. These findings suggest that the meaning of concepts within the domains of sexuality and sexual aggression is congruent among men in this sample regardless of sexual aggression history and likelihood of engagement in future sexual aggression. Therefore, although Malamuth (1989b) found men's attitudes and sexual arousal to be most similar when achieving comparable scores on measures of sexual aggression and attraction to sexual aggression, such a group differentiation is not reflected in the index of the overall semantic organization of concepts examined here.

Further evidence of the lack of systematic variation in the semantic networks produced by the three sexual aggression groups was provided by examination of the graphic representation of average networks for each group (Figures 1, 2, and 3) and analysis of the mean number of total links within networks. There were no significant group differences in the total number of links within networks indicating the complexity of knowledge organization within the domain of sexual aggression did not vary as a function of group membership. In addition, graphic representation (Figures 1,2, and 3) indicated that, on average, all participants' similarity ratings resulted in dichotomized groups of concepts. That is, on average, the sexual words were associated with positive and relationship terms while the aggression and sexual aggression terms were associated with negative terms. The predicted overlap between sexual and sexual aggression information for those participants admitting a past history of sexual aggression/coercion and/or a future likelihood of engaging in sexual aggression was not evident at this global level of analysis. Furthermore, the overlap is lacking given a much deeper level of analysis. That is, the analyses of the between word category links failed to detect significant group differences in the number of links between the sexual and aggression word categories and the sexual and sexual aggression word categories. This finding is in direct opposition to the hypothesis that individuals admitting a tendency toward sexually aggressive/coercive behavior should display an overlap of sexual and aggressive information due to possession of a more elaborate network for sexual information which includes aggressive elements.

Further examination of the between category links revealed that participants admitting a past history of sexual aggression/coercion and a future likelihood of engaging in sexual aggression produced fewer links than other groups between the aggression and sexual aggression word categories suggesting these individuals may view sexual aggression as fundamentally different from aggression in general. In addition, as predicted, participants admitting a past history of sexual aggression/coercion and a future likelihood of engaging in sexual aggression had significantly fewer links than other groups between the aggression word category and the negative word category. Although this same difference was not obtained for links between the sexual aggression and negative word categories, what is suggested is that individuals prone to sexually aggressive behavior (past and future) may have a less negative view of aggression than individuals not prone to sexually aggressive behavior. However this conclusion is qualified by the additional finding that all groups of participants regardless of history of sexual aggression, produced significantly more links between the negative word category and the sexual aggression and aggression word categories than between the positive word category and the sexual aggression and aggression word categories. What this suggests is that all participants in the sample generally associated aggression and sexual aggression with negative concepts rather than positive concepts.

The results of the analyses of the number of between word category links are almost directly paralleled by the results of the analyses of the link

weights between word categories. That is, analyses of link weight data failed to detect significant group differences in the strength of links between the sexual and aggression word categories and the sexual and sexual aggression word categories. In addition, no group differences in the strength of links between the aggression and sexual aggression word categories with the negative word category were obtained. Furthermore, all groups of participants regardless of history of sexual aggression, produced significantly stronger links between the negative word category and the sexual aggression and aggression word categories than between the positive word category and the sexual aggression and aggression word categories. What this suggests is that all participants had strong associations between negative constructs and both aggressive and sexually aggressive constructs.

In summary, conclusions from the analyses of link weights and the number of links between categories suggest that at the level of semantic organization examined in this research there is little difference in sexually aggressive and sexually nonaggressive men's views of sexual aggression. There is a weak suggestion that sexually aggressive males may view sexual aggression as different from generalized aggression which might be a cognitive defense mechanism. Defense mechanism defined as operant responses reinforced by reduction in autonomic nervous system arousal. That is, individuals who admit to engagement (past and future) in behaviors society labels as sexually aggressive may distort their own internal dialogue to maintain an acceptable view of themselves such that behaviors used to obtain sexual

contact are not labeled as aggressive. Furthermore, in the case of said individuals, a low level of internal/social inhibition regarding the use of aggression as a means to an end could be postulated. Therefore, sexual aggression may serve an instrumental function in that it is a means to achieve sexual contact and not necessarily an act of hostility towards women. That is not to say that some occurrences of sexual aggression could not be driven by a hostile view of women.

Given the overall similarity of networks generated by the three sexual aggression groups, it is not surprising that most of the other hypotheses predicting group differences in network organization were not borne out. Generally, groups did not display any significant differences in terms of the complexity of meaning for specific word categories as the results of the analyses of within word category links indicated or in terms of the importance of specific sexual aggression words as the results of the analyses of links on individual words indicated. In fact, all participants had the most number of links on the word "rape" as compared to all other words indicating its centrality to the domain of sexual aggression. In some respects this could be viewed as a validity check in that the domain of sexual aggression was the purported object of study and "rape" is the most clearly sexually aggressive term used in the present study therefore, from a common sense viewpoint, it is not surprising that this word proved to be the most central for all groups.

Clearly evident from the data discussed thus far is that the semantic networks of sexually aggressive/coercive individuals are not fundamentally

different from those of sexually nonaggressive/coercive individuals in regard to the overlap of sexual and aggressive information. Thus a cognitive theory of sexual aggression based on activation of a complex network containing a degree of overlap between sexual and aggressive constructs beyond that found in nonaggressive individuals is unsupported by the results of the present investigation.

Of note, those individuals admitting a past history of sexual aggression/coercion and a future likelihood of engaging in sexual aggression did have more links than the other two groups on two of the three sexual words ("breast" and "vagina"). This is suggestive of the notion that sexually aggressive individuals may have a more complex meaning structure for sexuality than other individuals. This conclusion is further supported by the analyses of between word category links and link weights which also resulted in unpredicted findings. One such finding was that the participants admitting a past history of sexual aggression/coercion and a future likelihood of engaging in sexual aggression formed significantly more and stronger links than other groups between the sexual and positive word categories. This same group of individuals produced stronger links between the sexual and relationship word categories than other participant groups. The temptation is to state that participants may have more associations between relationships and sex; however, caution should be used in interpretation of this finding in that although the words within this category were labeled "relationship" words (affectionate, caring, tender), they are more obviously also positive words. What is more

reasonably suggested by these findings is that individuals admitting a past history of sexual aggression/coercion and a future likelihood of engaging in sexual aggression view sex more positively than members of other groups. This network structure may be the cognitive underpinnings of the sexual promiscuity pathway proposed by Malamuth et al. (1991) to lead to sexually aggressive behavior. The sexual promiscuity pathway, as described by Malamuth (1996), is characterized by a "high emphasis on sexuality and sexual conquest" (p. 282). Promiscuous individuals tend to engage in frequent, impersonal sexual relations and view sex as gratifying in itself rather than as part of an interpersonal relationship. Thus explicit sexuality is a key component of the sexual promiscuity pathway. Previous research (Geer, 1996) indicates the stereotypical male pattern of information processing within the domain of sexuality is characterized by a positive view of explicit sexuality. That is, Geer found that men had more links than women between positive evaluation terms and sexual intercourse and female genitalia terms. This is the same pattern of links produced by sexually aggressive/coercive males in the present study. In some sense it could be said sexually aggressive males are "hypermasculine" by virtue of having a greater association between sexual and positive terms than other men in the study. Given sexually aggressive males were found to have a complex meaning structure for sexuality and a positive view of sex, one could conclude sexually aggressive males are highly sexualized. However, males in group b who also reported a history of sexual aggression did not fit this "hypermasculine" pattern. Therefore, moderation of sexual drive (group b) or

lack thereof (group a) could be postulated as stemming from the relative presence of conditioned social/internal inhibition. Furthermore, Malamuth (1996) stated, sexually aggressive behavior does not simply result from an increased sex drive in certain males but rather the hostile masculinity pathway may moderate the relationship between impersonal sex and sexual aggression. This brings us to the further purpose of the present study.

As stated previously, the second purpose of the present study was to explore the confluence model of sexual aggression by examining group differences on measures believed to index the two hypothesized pathways (hostile masculinity and promiscuity/impersonal sex) leading to the expression of sexually aggressive behavior. The first analysis conducted examined whether levels of hypermasculinity and sexual promiscuity/preoccupation varied as a function of sexual aggression/coercion history and likelihood of engaging in future sexual aggression. As predicted by the confluence model, individuals admitting a past history of sexual aggression/coercion and a likelihood of engaging in sexual aggression received the highest score on a measure of hypermasculinity. In addition, those individuals admitting only a past history of sexual aggression scored higher than those individuals admitting no history of sexual aggression/coercion and no likelihood of future sexual aggression on the same hypermasculinity measure. In regard to the promiscuity pathway, individuals admitting a past history of sexual aggression/coercion and a likelihood of engaging in sexual aggression received a higher promiscuity/preoccupation score than individuals admitting no history of sexual

aggression/coercion and no likelihood of sexual aggression. The comparison of the promiscuity/preoccupation scores of those individuals admitting only a past history of sexual aggression versus those individuals admitting no history of sexual aggression/coercion and no likelihood almost reached significance such that members of the former group scored higher than those in the latter. The general conclusion derived from these results is that higher levels of hypermasculinity and promiscuity/preoccupation are related to sexually aggressive behavior as predicted by the confluence model. As discussed previously with regard to the Pathfinder data, the implication is that sexually aggressive males are "hypermasculine" and sexually aggressive behavior may be uninhibited sexual expression.

A further purpose of the present study was to explore the utility of Pathfinder data and the confluence model in the prediction of performance on an analogue measure of sexually aggressive behavior. Although generally null results were obtained from the Pathfinder analyses, the attempt was still made to determine the best predictors of sexually aggressive behavior using the confluence model. The first priority was to determine that performance on the analogue measure varied as a function of group membership. Results of analysis of decision latency times from the Date Rape Discrimination Task (Marx & Gross, 1995) indicated that individuals admitting a past history of sexual aggression/coercion and a future likelihood of sexual aggression took significantly longer to decide that the man on the tape should stop his sexual advances than members of any other group. This finding suggests, as

predicted, that individuals who have engaged in sexual aggression have a more permissive attitude toward the use of coercive and aggressive tactics to obtain coitus than individuals with no such history. Again, what is suggested is uninhibited sexual expression in sexually aggressive males. The question remained as to which individual difference variables might best predict how long a person waits to decide a man has “gone too far”. Results from regression analyses indicated levels of hypermasculinity and admitted likelihood of engaging in future aggression to be the best predictors of decision latency times. Not surprisingly, the information obtained from Pathfinder predicted to enter the regression equation did not. Therefore, as indexed in this study, organization of sexual and aggressive information does not improve upon the predictive utility of the confluence model.

The predictive utility of the HMI is not surprising as other researchers (Bernat, Wilson, & Calhoun, 1999) have found high levels of callous sexual beliefs (a subscale of the HMI) to positively correlate with decision latency times. Specifically, since the initiation of the present investigation, Bernat, Calhoun, and Adams (1999) published a study in which men indicating a past history of sexual aggression and scoring high on the callous sexuality subscale of the HMI had significantly longer decision latency times to an analogue measure very similar to the Marx and Gross (1995) analogue measure. Bernat et al. also found that the participants who had high callous sexuality scores and long decision latency times had greater penile tumescence to sexual depictions that included force than a group of nonaggressive males. From these results,

Bernat et al. concluded sexually aggressive males have a coercive schema which allows men to continue the use of aggressive/coercive tactics to obtain sexual contact.

Possible explanations of the generally null results obtained from Pathfinder analyses include stimulus selection, the effect of social desirability, insufficient methodology, and the evolutionary notion that “the male mind generally possesses characteristics that enable coercive sex to occur in various circumstances” (Malamuth, 1996, p.279).

As mentioned previously, selection of the words for use in the present study was a difficult process, as the domains of sexual aggression and sexual words are small. Although word selection was accomplished using participants from the University subject pool, it was possible, perhaps even likely, a different group of participants would have generated a different sample of words resulting in a different pattern of associative linkages.

In regard to social desirability, it is possible participants did not give high similarity ratings to pairs of aggression and positive words and sexual aggression and positive words due to a desire to conform to socially accepted views of aggression. This conclusion seems unlikely as participants had little difficulty admitting a past history of sexual aggressive/coercive behavior which is a much more socially unacceptable behavior than answers to a word rating task.

At this point the possibility that the Pathfinder methodology was an insufficient means of detecting differences in the semantic organization of

concepts must be considered. Perhaps a different methodological approach such as a priming task or Andersen et al.'s (1999) sexual self schema approach might better elucidate cognitive differences in groups of sexually aggressive and nonaggressive men. Yet, the Pathfinder methodology has proven to be an adequate means of detecting semantic differences as a function of other variables (e.g. gender, sexual orientation) in previous research. In addition, the validity of the methodology in general is supported by evidenced significant differences in associative linkages between concepts (e.g. aggression and positive words v. aggression and negative words).

A further explanation of the Pathfinder null results might be found in the large literature base in the realm of sexual aggression which speaks to the notion of cognitive distortion (Abel et al., 1989; Malamuth & Brown, 1994; Marshall & Barbaree, 1990; Marshall, Hudson & Jones, 1995; Scully, 1988; Serin & Kuriychuk, 1994). Specifically, sexually aggressive males have been found to generally lack empathy for their victims and to distort their own behavior as justified. Other typical distortions (or alternatively, defenses) include the belief that the victim welcomed the aggressive act, that women wish to be dominated or that the male's behavior was in no way coercive or aggressive. In some sense the results of the present study support the existence of the latter distortion in the sample studied. The men in the present study who admitted engaging in sexually aggressive behavior and who waited the longest to say the man had "gone too far" on the decision latency task labeled sexual aggression just as negatively as those with no history of or

attraction to sexual aggression. Therefore, although they viewed sexual aggression as negative, they still engaged in the behavior and still distorted an aggressive act (date rape). The implication is that while the sexually aggressive males viewed sexual aggression in general as negative, they likely did not view their own behavior as truly sexually aggressive. As a result of such distortion, the semantic networks of males may not differ as a function of engagement in sexually aggressive behavior. That is, sexually aggressive males may recognize sexually aggressive behavior as negative but as a result of distortion do not view their own behavior as fitting the category of sexual aggression.

In summary, the results of the present study were not supportive of a network theory of sexual aggression which includes an overlap of sexual and aggressive elements. That is, although a subset of participants in the present study admittedly engaged in sexually aggressive behavior, their organization of sexual concepts differed from those participants who had not engaged in the behavior but did not reflect an overlap of sexual and aggressive and sexual and sexual aggressive concepts as predicted.

Results did support the confluence model of sexual aggression particularly when attention is paid to the interactive nature of the model. That is, Malamuth (1996) stated that it is the interaction of hostile masculine views and promiscuous sexuality that seems to lead to the expression of sexually aggressive behavior. He further contended that evolutionary views suggest all men may be distally motivated to sexually dominate women to ensure

reproductive success but actual expression of sexually aggressive behavior results from more proximate causes. Proximate causes might include involvement in a subculture of violence or negative experiences obtaining sexual access to women. The present study was not designed to explore proximate causes.

Conclusions

It appears that both hypermasculinity and sexual promiscuity/preoccupation are important variables related to sexually aggressive behavior. Overall, network organization of sexual and aggressive information does not appear to reflect an overlap of sexual and aggressive elements that differs as a function of past history of sexual aggression/coercion or admitted likelihood of engaging in sexual aggression. Therefore, sexually aggressive behavior cannot simply be linked to differences in the structure of networks but rather results from the interaction of individual difference factors which might include a "hypermasculine" approach to sexual negotiation and a lack of conditioned social/internal inhibition.

There are limitations to the present research that need to be addressed. First, this study was conducted using a sample of college-aged males and no extrapolation to other populations (e.g. convicted rapists) should be made. Future research comparing the semantic networks of convicted sex offenders to self-reported sexually aggressive males might prove fruitful in that convicted offenders may be representative of a more extreme point on the sexual aggression continuum. The possibility exists that differences in semantic organization could be detected when extremes of sexually aggressive behavior are compared.

The classification of participants into future likelihood/no future likelihood of sexual aggression groups utilized in the present study should be regarded with caution because it was derived from the Attraction to Sexual Aggression

(ASA) scale which stipulates a very specific context (no detection) in which sexual aggression might occur. The ASA scale is not a predictive measure of sexual aggression but rather, as the authors suggest, should be conceptualized as indexing an individual's attraction to the idea of being sexually aggressive.

The present study included no assessment of proximate (situational) factors which might lead to the expression of sexually aggressive behavior. Future studies might explore changes in semantic networks as a function of environmental conditions such as membership in a group espousing more permissive attitudes towards violence or presentation of stimuli containing a juxtaposition of sex and violence.

Further understanding of participants' performance on the Date Rape Discrimination Task might be achieved by examining the specific behavior manifested by the male perpetrator on the tape at the time a participant stops the tape as compared to a participant's self-reported sexually aggressive behavior. Perhaps participants judged the behavior of the man on the tape according to personal experience in a similar situation and thereby only indicated the man had "gone too far" when he surpassed the level of sexual aggression the participant had previously engaged in.

Although the results from the present study did not provide evidence of differences in network organization as proposed, total rejection of an information processing approach to sexual aggression seems premature. The obtained differences in the organization of sexual information suggest sex may be the primary motivation for sexually aggressive behavior but expression of

said behavior requires a lack of social inhibition. Further elucidation of the motivations for and the disinhibitors in operation might be achieved by schema or scripting approaches as suggested by Bernat, Calhoun, and Adams' (1999) research.

In general, what is evident from the present study is that although men varied in their behavior in that some admitted an attraction to engaging in sexual aggression and/or admitted engaging in sexual aggression, their labeling of sexual aggressive concepts did not vary according to their behavior. Participants in the present study had generally similar views of sexual aggression and aggression. However, as suggested by the distortion literature, those men that actually engage in sexually aggressive behavior may have a cognitive mechanism which allows them to distort the labeling of their behavior such that it is not viewed as sexually aggressive.

The implication of these conclusions is that early intervention might be effective if those individuals commencing upon the first segment of the trajectory suggested by the confluence model (i.e. hostile home environment) are identified. Of particular importance is conditioning social/internal inhibition to override a "hypermasculine" approach to sexual negotiation driven by a high regard for sexual activity.

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Appendix A: Words Used In Word Rating Task

Sexual

INTERCOURSE

BREAST

VAGINA

Aggressive

RAGE

VIOLENCE

ASSAULT

Sexually Aggressive

RAPE

MOLEST

VIOLATE

Positive

ENJOYABLE

NICE

HAPPY

Negative

BAD

UNPLEASANT

HORRIBLE

Interpersonal Relationship

AFFECTIONATE

CARING

TENDER

Appendix B: SES

Please place a number in the space provided which answers the following questions. For the purposes of this questionnaire sexual intercourse is defined as penetration of a woman's vagina, no matter how slight, by a man's penis; ejaculation is not required.

Since the age of 14, how many times have you:

1) been in a situation where you became so sexually aroused that you couldn't stop yourself even though your partner did not want to have sexual intercourse?

2) had sexual intercourse with a partner even though (s)he didn't really want to because you threatened to end your relationship otherwise? _____

3) had sexual intercourse with a partner when (s)he really didn't really want to because (s)he felt pressured by your continual arguments? _____

4) obtained sexual intercourse by saying things you did not mean? _____

5) been in a situation where you used some degree of physical force (twisting arm, holding down, etc.) to try to make your partner engage in kissing or petting when (s)he didn't want to? _____

6) been in a situation where you tried to have sexual intercourse with a partner when (s)he didn't want to by threatening to use physical force if (s)he didn't cooperate, but for various reasons sexual intercourse did not occur? _____

7) been in a situation where you used some degree of physical force to try to get a partner to have sexual intercourse when (s)he didn't want to, but for various reasons sexual intercourse did not occur? _____

8) had sexual intercourse with a partner when (s)he didn't want to because you threatened to use physical force if (s)he did not cooperate? _____

9) been in a situation where you obtained sexual acts from a partner such as anal or oral intercourse when (s)he didn't want to by using threats or physical force? _____

10) had sexual intercourse with a partner when (s)he didn't want to because you used physical force? _____

Appendix C: ASA

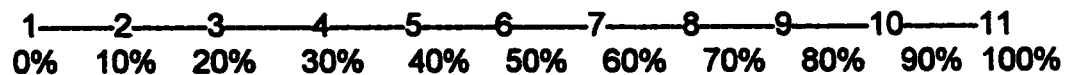
On the following pages there are a variety of different questions. Please answer all the questions to the best of your ability. If you are unsure of the answer to a question, please give your best guess. It is important that all of the questions be answered. There are no right or wrong answers, and no "trick" questions. Please answer the question by placing the number corresponding to your answer in the space provided. Please work quickly and answer as honestly as possible. Your responses will be kept completely confidential. Thank you for your cooperation.

For the following two questions please write the number (1-11) which corresponds to the percentage on the following scale.

1—2—3—4—5—6—7—8—9—10—11
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

What *percentage* of males do you think would find the following activities sexually arousing?

Necking (deep kissing)	_____
Petting	_____
Oral Sex	_____
Heterosexual Intercourse	_____
Anal Intercourse	_____
Male Homosexual Acts	_____
Group Sex	_____
Bondage	_____
Whipping/spanking	_____
Rape	_____ *
Forcing a female to do something sexual she didn't want to do	_____ *
Transvestism (wearing clothes of the opposite sex)	_____
Pedophilia (sex with a child)	_____



What *percentage* of females do you think would find the following activities sexually arousing?

Necking (deep kissing)	_____	
Petting	_____	
Oral Sex	_____	
Heterosexual Intercourse	_____	
Anal Intercourse	_____	
Male Homosexual Acts	_____	
Group Sex	_____	
Bondage	_____	
Whipping/spanking	_____	
Rape	_____	*
Being forced to do something sexual she didn't want to do	_____	*
Transvestism (wearing clothes of the opposite sex)	_____	
Pedophilia (sex with a child)	_____	

For the following three questions please write the number (0-4) which corresponds to your response from the following scales.

0 ————— **1** ————— **2** ————— **3** ————— **4**

Not @ all Arousing **Very Arousing**

How sexually arousing do you think you would find the following sexual activities if you engaged in them (even if you have never engaged in them)?

Necking (deep kissing)	_____
Petting	_____
Oral Sex	_____
Heterosexual Intercourse	_____
Anal Intercourse	_____
Male Homosexual Acts	_____
Group Sex	_____
Bondage	_____
Whipping/spanking	_____
Rape	_____ *
Forcing a female to do something sexual she didn't want to do	_____ *
Transvestism (wearing clothes of the opposite sex)	_____
Pedophilia (sex with a child)	_____

0 — 1 — 2 — 3 — 4
Not @ all Very Likely
Likely

If you could be assured that no one would know and that you could in no way be punished for it, how likely would you be to do the following?

Necking (deep kissing)	_____
Petting	_____
Oral Sex	_____
Heterosexual Intercourse	_____
Anal Intercourse	_____
Male Homosexual Acts	_____
Group Sex	_____
Bondage	_____
Whipping/spanking	_____
Rape	_____ *
Forcing a female to do something sexual she didn't want to do	_____ *
Transvestism (wearing clothes of the opposite sex)	_____
Pedophilia (sex with a child)	_____

How likely do you think it is that at some point in the future you might try the following activities?

Necking (deep kissing)	_____
Petting	_____
Oral Sex	_____
Heterosexual Intercourse	_____
Anal Intercourse	_____
Male Homosexual Acts	_____
Group Sex	_____
Bondage	_____
Whipping/spanking	_____
Rape	_____ *
Forcing a female to do something sexual she didn't want to do	_____ *
Transvestism (wearing clothes of the opposite sex)	_____
Pedophilia (sex with a child)	_____

Appendix D: Word Rating Questionnaire

Please rate the similarity of the following word pairs using the scale provided. For each word pair circle the number that indicates how *similar* you feel the two words are. Once you have entered a rating do not change your answer. Your answer should be based on your first impression of the word pairs. Do not spend too much time on each pair of words.

- # 1. NICE INTERCOURSE

1-----2-----3-----4-----5-----6-----7

Highly Similar

Highly Dissimilar

- 2.** **ENJOYABLE** **UNPLEASANT**

1-----2-----3-----4-----5-----6-----7

Highly Similar

Highly Dissimilar

- 3. HORRIBLE BAD**

1-----2-----3-----4-----5-----6-----7

Highly Similar

Highly Dissimilar

Appendix E: Demographic Questionnaire

Age _____

Race _____

Year in college _____

Native Language _____

Age of first sexual intercourse _____

Number of sexual partners since the age of 14 _____

How many times have you been unfaithful to a partner? _____

How many partners have you been unfaithful to? _____

What is your predominant sexual orientation? _____ Heterosexual
_____ Bisexual
_____ Homosexual

Please circle your response to the following questions:

I think about sex all the time 0—1—2—3—4—5
Strongly Disagree Strongly Agree

I think about sex more than anything else 0—1—2—3—4—5
Strongly Disagree Strongly Agree

I tend to be preoccupied with sex 0—1—2—3—4—5
Strongly Disagree Strongly Agree

I am constantly thinking about having sex 0—1—2—3—4—5
Strongly Disagree Strongly Agree

I think about sex a great deal of the time 0—1—2—3—4—5
Strongly Disagree Strongly Agree

Appendix F: Hypermasculinity Inventory

This inventory consists of 30 forced-choice items designed to measure controversial attitudes and beliefs. It is arranged in a forced-choice format in which you are asked to select one of two alternatives as true or more true for you. Sometimes it may be difficult to agree with either alternative as neither may seem very desirable to you. Or, it may be that you agree with both alternatives, but you are still asked to select the one item that most represents you and your opinion. The forced-choice format solves some technical problems of measurement, but it is not always subjectively comfortable to complete. Although you are, of course, free to refuse to answer any item, the scientific purposes of the research are best fulfilled through your cooperation. In addition, the language used in some of the alternatives might be considered offensive or even obscene by some men. Others may find the language representative of comments overheard in all male groups. It is not the author's intent to offend anyone's sensibility or to endorse any of the alternative attitudes and beliefs herein as scientifically and socially valid. Rather, the intent of the inventory is to measure your personal preferences in order to investigate personality, attitudes, and behavior in a domain specific to men.

Please circle the response (1 or 2) you most agree with for each item.

1. **1 After I've gone through a really dangerous experience my knees feel weak and I shake all over**
 2 After I've been through a really dangerous experience I feel high
2. **1 I'd rather gamble than play it safe**
 2 I'd rather play it safe than gamble
3. **1 Call me a name and I'll pretend not to hear you**
 2 Call me a name and I'll call you another
4. **1 Fair is fair in love and war**
 2 All is fair in love and war
5. **1 I like wild, uninhibited parties**
 2 I like quiet parties with good conversation
6. **1 I hope to forget past unpleasant experiences with male aggression**
 2 I still enjoy remembering my first real fight
7. **1 Some people have told me I take foolish risks**
 2 Some people have told me I ought to take more chances
8. **1 So-called effeminate men are more artistic and sensitive**
 2 Effeminate men deserve to be ridiculed
9. **1 Get a woman drunk, high, or hot and she'll let you do whatever you want**
 2 It's gross and unfair to use alcohol and drugs to convince a woman to have sex
10. **1 I like fast cars and fast women**
 2 I like dependable cars and faithful women

11.
 - 1 So-called prick teasers should be forgiven
 - 2 Prick teasers should be raped
12.
 - 1 When I have a few drinks under my belt, I mellow out
 - 2 When I have a few drinks under my belt, I look for trouble
13.
 - 1 Any man who is a man needs to have sex regularly
 - 2 Any man who is man can do without sex
14.
 - 1 All women, even women's libbers, are worthy of respect
 - 2 The only woman worthy of respect is your own mother
15.
 - 1 You have to fuck some women before they know who is boss
 - 2 You have to love some women before they know you don't want to be boss
16.
 - 1 When I have drink or two I feel ready for whatever happens
 - 2 When I have a drink or two I like to relax and enjoy myself
17.
 - 1 Risk has to be weighed against possible maximum loss
 - 2 There is no such thing as too big a risk, if the payoff is large enough
18.
 - 1 I win by not fighting
 - 2 I fight to win
19.
 - 1 It's natural for men to get into fights
 - 2 Physical violence never solves an issue
20.
 - 1 If you're not prepared to fight for what's yours, then be prepared to lose it
 - 2 Even if I feel like fighting, I try to think of alternatives
21.
 - 1 He who can, fights; he who can't, runs away
 - 2 It's just plain dumb to fistfight
22.
 - 1 When I am bored I watch TV or read book
 - 2 When I am bored I look for excitement
23.
 - 1 I like to drive safely, avoiding all possible risks
 - 2 I like to drive fast, right on the edge of danger
24.
 - 1 Pick-ups should expect to put out
 - 2 So-called pick-ups should choose their men carefully
25.
 - 1 Some women are good for only one thing
 - 2 All women deserve the same respect as your own mother
26.
 - 1 I only want to have sex with women who are in total agreement
 - 2 I never feel bad about my tactics when I have sex
27.
 - 1 I would rather be a famous scientist than a famous prizefighter
 - 2 I would rather be a famous prizefighter than a famous scientist
28.
 - 1 Lesbians have chosen a particular life style and should be respected for it
 - 2 The only thing a lesbian needs is a good, stiff cock
29.
 - 1 If you are chosen for a fight, there's no choice but to fight
 - 2 If you are chosen for a fight, it's time to talk your way out of it
30.
 - 1 If you insult me, be prepared to back it up
 - 2 If you insult me, I'll try to turn the other cheek

Appendix G: Consent Form

Name of Study:	Attitudes and behaviors related to sociosexual interactions
Performance Sites:	Louisiana State University
Contacts:	James H. Geer, Ph.D. Mon-Fri 8-4:30pm 388-4095 Laura Estupinan, M.A. Mon-Fri 8-4:30pm 388-8745
Purpose of the Study:	This investigation is designed to determine men's attitudes regarding sexual interactions and experiences with sexual situations.
Subjects:	Participants in this investigation must be at least 18 years of age at the time of participation. Only male undergraduate students whose native language is English may participate in this study.
Number of Subjects:	A total of 200 participants will participate in this study.
Study Procedures:	This study consists of two parts. In the first part of the study, participants are asked to listen to a 6 minute audiotape of a date between a man and a woman. The task of the participant is to indicate when the man on the tape should stop his sexual advances. In the second part of the study, participants are asked to complete a number of questionnaires. The first questionnaire involves rating the similarity of pairs of words. The rest of the questionnaires request participants to reveal their sexual attitudes and sexual experiences. Several of the questionnaires are designed to measure controversial attitudes and beliefs. Some of the behaviors described are acceptable to some men and others are not. Because you are an anonymous participant in a

psychological study, you are asked to be as truthful as you can be. Completion of the questionnaires will take approximately one hour.

Benefits:

Participants will receive four extra-credit points for participation in this study and will gain experience in engagement in psychological research from the perspective of a participant. Future benefit to the community is expected as the results of this investigation will provide information regarding the sexual behavior and beliefs of men.

Risks/Discomforts:

As a participant, you may be embarrassed and /or distressed by exposure to sexually explicit material and by revealing sensitive information regarding your sexual behavior and/or beliefs. Should this occur, please notify the examiner and/or the investigators if necessary. If distress occurs after completing the study and you do not feel comfortable contacting the investigators, please contact one of the agencies delineated in the debriefing form for the study.

Right to Refuse:

Participation in this study is voluntary and you may change your mind and withdraw from the study at any time without penalty or loss of extra-credit points.

Privacy:

This study is anonymous, meaning that your responses cannot be linked to any identifying information. Please be sure to seal your questionnaires in the envelope provided upon completion. All questionnaires will be maintained in a secured area and destroyed once numerical data has been entered in the study's database.

Financial Compensation:

There is no financial compensation for your participation in this study. There is no expense incurred by you by participating in this study.

The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to James H. Geer, Ph.D. (388-4095) or Laura Estupinan, M.A. (388-8745). If I have questions about subjects' rights or concerns, I can contact Charles E. Graham, Chairman, LSU Institutional Review Board, (225) 388-1492.

I agree to participate in the study described above and acknowledge the researchers' obligation to provide me with a copy of this consent form if signed by me.

Subject Signature

Date

Witness

Date

Appendix H: Debriefing Form

Thank you for participating in this study. Please do not discuss this study with anyone else who has not already participated in the study as this could likely bias our results. To reiterate, your responses to the measures utilized in this study will be kept confidential and will in no way be linked to your name or any other identifying information.

The purpose of the study in which you just participated was to explore the relationship between sexually aggressive behavior and a variety of aspects of personality and how sexual and aggressive information is organized in an individual's memory. Attitudes regarding masculinity, sexual experience, and sexual preoccupation have been found to be related to whether or not a person admits engaging in or considers engaging in sexually aggressive behavior. At this time, we are unsure as to how the organization of sexual and aggressive information relates to sexually aggressive behavior. The goal of this study is to examine this hypothesized connection.

While the following is probably obvious to all participants, we would like to emphasize that the story you heard about rape was COMPLETE FANTASY. This story was constructed by Marx and Gross (1995) for specific use in studies of sexual aggression such as the one in which you just participated. In reality, as you hopefully are aware, rape is a terrible crime and is punishable by many years in prison. Also, rape victims suffer severe psychological damage as well as the more obvious physical effects of the assault. Unfortunately, many people still believe a number of falsehoods or myths about rape. For example, one totally unfounded myth is that if a woman does not immediately report a rape, or hesitates to report it, then the act is somehow not considered a real rape. A second falsehood is that if a woman does anything which puts her at greater risk or makes her more vulnerable to being victimized (e.g. going to a man's apartment, wearing enticing clothing, etc.) she somehow brings the rape upon herself. These are in fact just myths and are TOTALLY unfounded. Hopefully, you will leave this study with a more realistic and accurate view of rape.

If your responses to any of the measures utilized in this study cause you to be concerned regarding your own sexual behavior, please contact the Student Mental Health Service at 388-8774 for assistance. Furthermore, if you are interested in discussing issues relevant to sexual aggression with other men in college please contact LuoLuo Hong, Ph.D. in the Wellness Department at 388-6271 regarding the Men Against Violence group. Further questions regarding this study or information regarding the results obtained should be directed to Laura Estupinan (388-8745) or Dr. James Geer (388-4095).

Once again, thank you for your participation.

Vita

Laura Estupinan-Kane is a native of Baltimore, Maryland. She completed her undergraduate work at Wellesley College in 1990 and went on to pursue a master's degree in developmental psychology from The Teacher's College of Columbia University in 1994. She entered the doctoral program in clinical psychology at Louisiana State University in 1994. She graduated from Louisiana State University with the degree of Doctor of Philosophy in psychology in 2001.

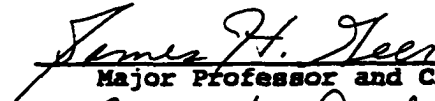
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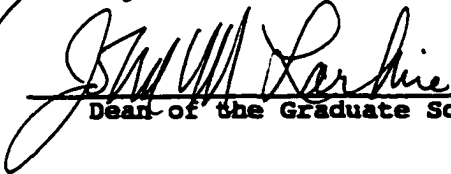
Candidate: Laura Anne Estupinan - Kane

Major Field: Psychology

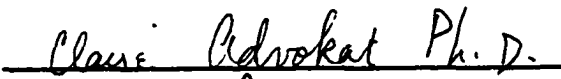
Title of Dissertation: Variables Related to Sexual Aggression in Male
College Students


Approved:

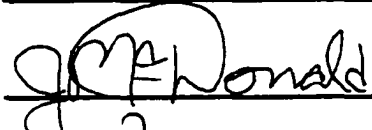

Major Professor and Chairman



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J. F. Donald


Wes Shuman

Date of Examination:

February 7th, 2001